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ABSTRACT

Focusing on literacy learning and instruction, the 44 papers in this yearbook highlight the increasing sense of responsibility of literacy teachers as learners themselves and to understand the nature and impact of teacher change on student learning. Papers in the yearbook include: "What Counts in Teacher Education? Dilemmas in Educating Empowered Teachers" (G. G. Duffy); "Critical Pedagogy, Postcolonial Politics and Redemptive Remembrance" (P. McLaren); "The Intertextual Links of Readers Using Multiple Passages: A Postmodern/Semiotic/Cognitive View of Meaning Making" (D. K. Hartman); "Academic Libraries and Research in the Teaching of English" (M. L. Kamil and T. Shanahan); "Now That Literacy Happens in Contexts, How Do We Know if the Contexts Are Authentic?" (J. Myers); "Alternative Assessments of Literacy: Teachers' Actions and Parents' Reactions" (E. H. Hiebert and others); "The Computer as a Social/Physical Environment in Emergent Literacy" (K. Olson and E. Sulzby); "Relationships among Physical Design of Play Centers, Teachers' Emphasis on Literacy in Play, and Children's Literacy Behaviors during Play" (L. M. Morrow); "The Effects of 'Storybook Partnerships' on Young Children's Conceptions of Stories" (S. B. Neuman and C. Soundy); "A Longitudinal Study of the Growth of Spelling Abilities within the Context of the Development of Literacy" (M. Hughes and D. Searle); "The Relationship between Rapid Automatized Naming and Orthographic Knowledge" D. R. Bear and D. Barone); "The Effects of the CVS Strategy on Children's Learning" (E. Carr and others); "The Relationship between Reading Practices Literature and Teachers' Talk about Practices" (P. L. Anders); "Prediction Training and the Comprehension and Composing Performance of Fourth-Grade Students" (M. W. Spears and L. B. Gambrell); "Elementary Students' Use of Imagery in Developing Meaning in Literary Text" (B. C. Konopak and others); "Bridging across Instances of a Concept in Science Instruction" (C. S. White and others); "An Analysis of the Array of Literary Works in District Core Reading Lists, Grades K-6" (J. Flood and others); "Bart: A Case Study of Discourse about Text" (S. I. McMahon and others); "A Community of Learners Selecting and Developing Writing Topics" (E. A. Connell and P. P. DiStefano); "Implementing Whole-Language Learning: Adult Literacy Teachers' Problems and Concerns" (N. D. Padak and others); "Thriving and Growing with Change" (L. R. Roehler and others); "Basals, Teacher Power, and Empowerment: A Conceptual Framework" (K. F. Thomas and others); "Preservice Teachers' Conceptions of Content Area Literacy" (C. J. Gordon and M. Hunsberger); and "Comprehension Instruction in Literature-Based Reading-Language Arts Classroom" (D. W. Emery). (RS)

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Fortieth Yearbook • National Reading Conference

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LEARNER FACTORS/TEACHER FACTORS: ISSUES in LITERACY RESEARCH and INSTRUCTION

Fortieth Yearbook
of
The National Reading Conference

JERRY ZUTELL
Ohio State University

SANDRA MCCORMICK
Ohio State University

With the editorial assistance of

LAUREL L. A. CATON
Ohio State University

PATRICIA O'KEEFE
NRC Headquarters

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PREFACE

The *40th NRC Yearbook* contains scholarly papers by well-established, respected scholars and by newer members of the literacy research community. These papers represent the field's best thinking across a wide range of topics and issues pertaining to literacy learning and instruction. The title, *Learner Factors/Teacher Factors: Issues in Literacy Research and Instruction*, is meant to capture this broad range. It is also meant to highlight our increasing sense of responsibility to understand literacy teachers as learners themselves and to understand the nature and impact of teacher change on student learning.

As with past volumes, the *40th Yearbook* is highly representative of the NRC membership. This year 82 NRC members served on our editorial board, and an additional 26 persons served as guest reviewers. Their reviews were characteristically thoughtful, thorough, and fair, with many helpful suggestions for revision. Of the 121 general papers submitted for review, 39 are published in the *40th Yearbook*. There are also five special papers—the NRC Annual Review of Research, one invited address, two student award papers, and, of course, the Presidential Address. The 44 papers published represent the work of 92 different authors. All papers except the Presidential Address received outside, blind reviews. The overall acceptance rate for the *40th Yearbook* is 34%.

We thank the authors and reviewers, all of whom made significant contributions to the high quality of the *40th Yearbook*. Laurel Caton, our editorial assistant, deserves special recognition for her industry, enthusiasm, and careful attention to detail. At NRC headquarters, Pat O'Keefe and Anthony Cheung were especially helpful in transforming manuscripts into final copy and in seeing to it that the *Yearbook* was printed and mailed as soon as possible.

The publication of the *40th Yearbook* also marks the end of our 3-year tenure as editors. During that time we received over 340 papers from presenters for review, 10 invited papers that also went through the review process, and three Presidential Addresses. A total of 146 papers appeared in the three Yearbooks, an average of 49 per year; our combined acceptance rate for reviewed manuscripts was 40%.

We are grateful to have been able to serve the NRC membership and the literacy field in this way. Editing the *NRC Yearbook* has been a truly rewarding experience that has contributed significantly to our own professional growth. We wish the new editors good luck, and we are confident they will also find the task demanding, but very worthwhile.

Jerry Zutell
Sandra McCormick

Ronald P. Carver

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OSCAR S. CAUSEY AWARD

Each year NRC selects a recipient to receive the Oscar S. Causey award based on outstanding research contributions in the literacy field. This award was named for the founder of the National Reading Conference who established the organization in 1952 and led it through its formative years.

This year's winner of the Oscar S. Causey Award is a very special individual. A long time member of the National Reading Conference, the author of 13 articles in *JRB* and 9 in the *NRC Yearbook*, he is renown for his work in development and empirical evaluation of theories of the reading process. It would not be hyperbole to suggest his work epitomizes what the relationship between theory and research ought to be. Combining both inductive and deductive logic, he carefully traces implications of basic premises and postulates in his theory and devises studies that provide data to evaluate whether the implications, and thereby the basic postulates, of the theory hold. Through this give and take with data and interpretation, he builds, tests, revises, refines, and retests until he is able to bring theory and evidence into some sort of homeostasis.

What the casual reader of reading research may not know is that he has served the educational research community in countless ways. For example, he has established a reputation as a debunker of popular fancies. He has, at one point or another in his career, brought into question the reality of speed reading, the validity of standardized tests as measures of change, the efficacy of listening tests as estimates of aptitude, the ability of *Degrees of Reading Power* to measure reading achievement in the same units as it estimates readability of text, and the efficacy of explicit instruction in reading comprehension. He has championed the cause of privileging the educational over the psychometric properties of tests. And, he has warned us that in examining research implications, we would derive better educational implications if we devalued significance testing and gave greater voice to indices that tell us something about the magnitude of effects.

I noted earlier his NRC publications. Also included in his 80-odd published pieces are several books and over 70 articles, including 9 in *RRQ* and 5 in *AERJ*. He has served at the University of Missouri in Kansas City, as a demanding but understanding and nurturing mentor and, as his peers will tell you, a tireless colleague.

There is a common thread to all his achievements. In his life, in his professional work, in his devotion to the highest principles of empirical science, he serves as a model to us of what it means to be a scholar. For all this, and for all he has done for NRC and the reading field at large, it is my privilege to present on behalf of the National Reading Conference, the 1990 Oscar S. Causey Award to Professor Ronald P. Carver.

Presented by P. David Pearson
December 1990

Trika Smith-Burke

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ALBERT J. KINGSTON AWARD

The annual Albert J. Kingston Award for Service to the National Reading Conference was established in 1985 to honor Professor Albert Kingston for years of dedicated service to NRC. Professor Kingston, an educational psychologist and reading specialist, was President of NRC in 1965–66.

The Albert J. Kingston Award for 1990 is presented to Trika Smith-Burke. Trika has been a member of NRC as long as many of us can remember, since 1973 or 1974, or possibly even earlier. It seems that she has always been a member of the organization, inextricably associated with its growth and development.

Trika was chair of the Publications Committee when she realized the precarious nature of NRC's financial position. For that discovery, she was rewarded by being named Treasurer, and she spent the next 6 years solving the financial problems of our organization. She also assumed the role of "manager" until professional services could be obtained. She supervised the transition of management responsibilities to AERA, then to a professional management company, and finally to our current team. She was elected President in 1986. NRC membership grew substantially, lapsed subscriptions were reinstated, and the organization took on a more serious professional appearance.

All of Trika's accomplishments are matters of record. What is not a matter of record is that, in thinking of NRC, one is likely to think immediately of a particular individual. Trika is clearly one individual who many of us immediately associate with NRC. This year's award is made to a person for whom superlatives are insufficient. Trika Smith-Burke embodies the best of all that NRC has to offer and more.

Presented by Michael L. Kamil
December 1990

WHAT COUNTS IN TEACHER EDUCATION? DILEMMAS IN EDUCATING EMPOWERED TEACHERS*

Gerald G. Duffy

This is a talk about putting teachers in charge of their teaching. It is deeply rooted in my own experience as a young teacher when John Joy, my first principal, taught me to take charge of my teaching and, in so doing, to have deep faith in teachers and in what teachers can do if they are freed to do so.

But, as deeply as I believe in teachers being in charge, this has nevertheless been a difficult paper to put together. The problem is that putting teachers in charge of their instruction is, in many people's minds, a questionable premise to begin with. I then further argue that our failure to improve classroom literacy instruction is linked to a failure to put teachers in charge. And finally I argue that the failure is at least partially *our* fault—that teachers are not in charge of their teaching because we expect them to follow *our* thinking, which prevents *them* from thinking. The result may be the creation of passive teachers who, because they have learned to wait for us to direct them, are unable to respond flexibly and adaptively to opportunities to develop the kind of enriched literacy we all say we want. In short, I do not think we invest in the minds of teachers; instead, we invest in theories, programs, and procedures which we then expect teachers to follow. *We* come up with a theory, we expect teachers to follow; *we* come up with a program, we expect teachers to follow; *we* come up with a procedure, we expect teachers to follow. Thus, we teach teachers that the power lies with us, not with them.

I do not propose answers here. Instead, I describe dilemmas. In the end, what I argue for is inquiry—a new research agenda.

BACKGROUND

My comments are grounded in two ways.

---

*Presidential Address, The National Reading Conference, Miami Beach, Florida, November 28, 1990. I am indebted to the following colleagues and friends for their generous assistance in writing this paper: Henrietta Barnes, Robert Bawden, Kendra Bell, Margret Buchmann, Bruce Burke, Danise Cantlon, Mark Conley, Susinn Duffy, Sheila Fitzgerald, Jim Gavelek, Beth Ann Herrmann, Carol Inman, Janet Johnson, Auleen Lutes, Sandra Michelsen, Queen Ottgen, Richard Prawat, Cathleen Rafferty, Taffy Raphael, Laura Roehler, Sue Thomas. Special thanks go to Julie Ashi and Barbara Reeves for their care and concern in preparing the manuscript.

Personal History

First, my comments are grounded in my personal history as a teacher and teacher educator, work which has involved me in many of the change efforts of our time. For instance, as a young fourth-grade teacher in inner city Buffalo in the same year that Sputnik went up, I took Jeanette Veatch (1959) seriously and tried to do individualized reading; as a laboratory school teacher at the State University College in Fredonia, New York, I took Conant (1963) seriously and became what he called a "clinical professor"; in my early years at Michigan State University, I took competency-based teacher education seriously and designed and directed objective-driven reading methods courses enrolling 350 prospective teachers at a time; I took seriously assaults by critics such as Koerner (1963) and Silberman (1970) and tried to beef up my courses correspondingly; I took Teacher Corps seriously, and spent 4 years on that as well as 4 additional years on innovative programs that grew out of Teacher Corps; and I took clinical teacher education ideas seriously and spent 6 years teaching undergraduate methods courses in urban elementary schools where field situations drove instruction. I have grown old with reform efforts. When I look back, I do not know whether to be embarrassed or proud.

But I AM worried. Despite reform and isolated pockets of progress, classroom instruction is basically the same now as it was when I started in 1957 (Cohen, 1988; Cuban, 1984; Duffy & McIntyre, 1982; Durkin, 1978–79; Elmore & McLaughlin, 1988; Herrmann, 1986).

Consequently, the first thing that grounds this paper is my own frustration with our inability to influence classroom practice. Despite all our best efforts, creating enriched forms of literacy for the masses of at-risk kids in our society is still an unattained goal.

My Research

But, more directly, my comments are grounded in my current literacy research. Recently, I have pursued three questions about teacher empowerment. First, what does an empowered literacy teacher look like? Second, what impact do empowered teachers have on at-risk students? And third, what teacher education practices expedite or impede the development of empowered teachers?

This research began when a northern Michigan intermediate school district requested that we conduct an inservice program to orient teachers to a new version of Michigan's statewide reading assessment test. Because of the evidence from Cuban (1984) and others that traditional short-term staff development does not result in substantive instructional change, we declined. Instead, we proposed a 5-year staff development effort which, in collaboration with Auleen Lutes of the Traverse Bay Area Intermediate School District, was initiated in 1988 with volunteer teachers and their principals in four small, low-SES, rural elementary schools. Auleen and I now work with eight rural districts and approximately 60 teachers and principals, and we will continue to do so for the full 5 years. The intent is to create in each building a cadre of teachers and a principal who develop substantive literacy with their at-risk kids and who, through their examples and coaching, restructure the literacy instruction throughout their respective schools and, ultimately, in neighboring schools.

The research questions were based on the assumption that we cannot develop enriched literacy unless we have "empowered" teachers, that is, teachers who create and orchestrate complex settings and complex instructional interactions. To develop empowered teachers, we created a staff development effort consisting of three components: (a) we instruct gatherings of all participants from the several schools once a month; (b) we coach teachers individually in their classrooms every other week; and (c) we develop in each participating school communities of teachers and their principal who live the principle that teaching is intellectual work, not technical work.

To answer my research questions, I targeted 4 of the teachers and 5 at-risk kids from each teacher's classroom for intensive, case study analysis. The results to date have been gratifying. The low-group target students I studied last year in each of four classrooms grew at a rate greater than at-risk students normally do. The 4 target teachers, for their part, changed their instructional practices.

But as gratifying as these results may be, what has puzzled me—and what ultimately became the focus of my research—is the difficulty these teachers had, and in some cases are still having, taking control of their own professional work. They often seem to believe that they *shouldn't* be in charge of their work.

Typically, teachers reveal this difficulty in discussions of the basal textbook. For instance, one of the teachers retrospectively discussed her early insistence upon sticking strictly to the basal by saying:

> I think my main inhibitor was I just felt that I had to do that basal . . . I didn't know where to start. I didn't—like I said, I was so chained to the basals that I didn't think I could just get a [literature] book and, you know? I didn't know what to assign.

But teachers' difficulties in taking control of their own work go well beyond basal textbooks. It was also reflected in their expectation that I should *tell* them what to do. In other words, they *wanted* to be directed. They *expected* to compliantly follow. And when I resisted giving them procedures or programs or directions to follow, all the teachers expressed disappointment, some were frustrated, and a few were angry.

These experiences troubled me. But, the more I thought about it, the more it became clear to me that teachers compliantly follow because they seldom have opportunities to do anything else. For instance, the directives of Madeline Hunter's ITIP (Hunter, 1967), of Reading Recovery (Pinnell, 1989), of IBM's Write to Read (Freyd & Lytle, 1990), as well as of a variety of theories, approaches, and belief systems, to say nothing of basal text teachers' guides, subtly (and, sometimes, not so subtly) set the expectation that teachers should *suppress* individual professional thought in favor of following along. Note, for instance, the frequent use of the word "training"—as in "teachers must be trained to use this program" as it contributes to the "following along" concept.

The problem is not in the programs, theories, or procedures themselves any more than the problem is in basal textbooks. I am not, for instance, opposed to the principles of ITIP or Reading Recovery. The problem is in the perception—on the part of teachers and those of us trying to help teachers—that instructional power lies not with the minds of teachers but, rather, with programs, procedures, or theories that we create for teachers to follow.

In short, I began to think that we are participating in a system which encourages teachers to compliantly follow rather than to take charge. My thinking about why this happens and what we ought to do about it—particularly as it relates to the northern Michigan teachers—is the major grounding for this paper.

THE NATURE OF EMPOWERMENT

Why We Need Empowered Teachers

But why do we need teachers who are in charge of their own work? Why can't we have teachers who follow? I think there are two reasons.

First, we need empowered teachers because only empowered teachers are creative enough to develop the rich literacy we all say we want. Rich literacy demands authentic occasions for literacy which cannot be anticipated by programs and procedures but must be created by the teacher on the spot; rich literacy demands spontaneous teacher decisions based on kids' restructured understandings which cannot be anticipated by programs and procedures but must be created by the teacher on the spot; rich literacy demands socially constructed learning embedded in instructional dialogs which cannot be anticipated by programs and procedures but must be created by the teacher on the spot; and, most important, rich literacy demands a tailoring of instruction to circumstances which cannot be anticipated by programs and procedures but must be created by teachers on the spot. In short, rich literacy demands teachers who create.

But recently it has become more and more difficult for teachers to be creative. Directive and prescriptive top-down policy mandates about programs and procedures, many based in the results of *our* research, take instructional control out of the hands of teachers and convey the message, "Just follow these directions and everything will be okay." The result is passivity, not creativity.

Because I am a private pilot, I have been struck by how analogous this is to what is happening to commercial airline pilots. Commercial aviation, like literacy instruction, has become more and more complex in recent years. The response has been to remove control from pilots and to install automated cockpit systems which limit pilots to monitoring the system and its backups. Interestingly enough, however, this is coming under serious scrutiny by the Federal Aviation Authority (Lumsden, 1990). In work sponsored by the Aviation Safety Research Act, researchers are discovering that when things go wrong, commercial pilots tend to passively wait for the computer to fix it rather than taking charge themselves, sometimes with disastrous results.

This is not unlike teaching. When teachers are expected to follow materials, programs, tenets of theory and procedures, they become passive. And, like pilots, teachers stop making professional judgments—they come to depend on the system rather than taking charge themselves. Apple (1983) calls it the "de-skilling" of teachers. We see the results in our kids.

The second reason for empowering teachers relates to morale. Again, commercial aviation research provides an analogous situation. Pilots choose aviation as a vocation because they enjoy performing difficult, challenging tasks but, when that gratification is removed by taking basic flying tasks out of their hands, pilots are effectively circumvented and, ultimately, *dis*empowered. They lose the sense of professional dignity they had when *they* flew the plane.

Teachers, like pilots, choose to teach because they want to perform difficult and challenging work. But when we take control away from them by directing them to follow materials or codified approaches or tested procedures, we make them into technicians who follow directions. In doing so, we rob them of their professional dignity.

So we need empowered teachers because enriched literacy cannot be systematized and technicized. It can only be constructed in creative response to situational conditions. But we also need to empower teachers because it is the moral and ethical thing to do.

What Does An Empowered Teacher Look Like?

In the broadest sense, empowered teachers assume control of their work. As such, empowerment is a mental thing, and is not easy to observe. Over the course of 64 classroom visits (16 with each of my 4 northern Michigan target teachers), I saw three indications that they were assuming control of their teaching.

Three indicators of empowerment. First, I began to notice that, rather than passively following teachers' guide directions, these teachers began creating their own instruction. For instance, at the end of the year, one teacher reported:

> I don't know. I didn't really cover [comprehension] before. I just did comprehension . . . you know . . . I just asked questions at the end of the book, at the end of the basal. Kind of sad now that I think about it but . . . . Ha! That's where I was . . . [but now] . . . it varies depending on the story and the skill or strategy I'm working on.

She then described a flexible instructional pattern involving decisions about what kids are reading, the text structure of the selection, previously taught strategies, and modified versions of both teacher explanation and reciprocal teaching, concluding by saying, "It's changed quite a bit. For the good, I think. I feel good about it."

Second, I began to notice a growing ability to tolerate ambiguity. For instance, a teacher who had for years believed that there was a single procedure for figuring out words—the one promoted by the basal authors—now is willing to accommodate a more complex and ambiguous concept and to make decisions herself which she formerly believed to be the province of the basal text.

Third, the teachers demonstrated a growing ability to make reading instruction authentic—or, in today's jargon, to create situated cognition (Brown, Collins, & Duguid, 1989; Leinhardt, 1988; Resnick, 1987). Whereas early in the year they directed students to prepackaged, commercially prepared activities, they gradually began creating genuine occasions for literacy—ones that began with their kids, not ones that began with their materials. Rather than "materials driving instruction," it is now "kids driving instruction."

For instance, one second grade was having difficulty with interpersonal relations. Consequently, the teacher and her kids developed a unit on how to get along with each other. For these kids, this was an authentic situation—their troubles in the classroom were real, so there was nothing contrived about reading and writing about interpersonal relations. But the teacher had to be in charge to accomplish it; the unit was not packaged for her ahead of time. She could not let the basal stories drive her instruction; instead, she searched two different basals and several trade books to find text dealing with kids getting along together. She could not let the basal's scope and sequence chart drive her instruction; instead, she analyzed what skills and strategies kids would need when reading texts about getting along together and taught those. She could not depend on "canned" prescriptions or procedures for carrying out instruction; instead she created her own instruction using combinations of instructional techniques gleaned from a variety of sources. In sum, she was in charge; *she* selected the materials, *she* organized the curriculum, and *she* created the instruction.

Empowerment as conceptual selectivity. As I continued to study these teachers, however, I began to realize that the essence of empowerment goes beyond these single indicators. These teachers' control of their work was embodied in their ability to use a variety of interdependent concepts in various combinations depending upon circumstances. Sometimes they put situated learning in the foreground and moved strategies to the background; sometimes they dealt with contextual constraints as the foreground and moved concerns about socially constructed learning to the background. Such selectivity is particularly evident when empowered teachers encounter difficulties. For instance, when one of these teachers was having difficulty teaching her kids how to monitor sense making, she put monitoring on hold and moved to higher ground, modifying the lesson to help her kids understand why sense making is the heart of reading. Knowing what higher ground is in any given situation and being able to fluidly select ways to move to it is an essential characteristic of empowerment. To use a coaching analogy, these teachers were not like football players following set plays; they were like hockey players who select different strategies in fluid response to different situations as these emerge in the flow of action. These teachers knew they were trying to develop enriched literacy; in trying to achieve that goal, *they thoughtfully selected various principles from among several theories or procedures for use at various times depending upon the situation.*

This phenomenon—which I began calling "conceptual selectivity"—became my ultimate criterion for empowerment. It is a kind of thoughtful eclecticism or, if you associate "eclecticism" with atheoretical, anti-intellectual, or conceptually ungrounded action, substitute instead "thoughtful integration" or "conceptual plurality." In any case, what characterizes conceptual selectivity is a programmatic coherence because, though situationally based, it is driven by a clear conception of higher ground—the goal of enriched literacy. As a result, these teachers are not randomly employing theories and procedures. Nor are they viewing knowledge as a set of rules or dogma to be faithfully followed in rigid ways. Instead, empowered teachers combine, adapt, and orchestrate what they know, creating new ways to achieve enriched literacy as new situations arise, just as they combine, adapt, and orchestrate a variety of materials to achieve that goal.

Summary

Teacher empowerment does not mean "giving teachers power," or that teachers should overthrow administrators and school boards, or that teachers do whatever they want to. Teachers are morally and ethically bound to serve their kids; therefore, empowerment cannot be what Buchmann (1990) calls "private entrepreneurship in teaching." Instead, empowerment is a "taking charge" by teachers; a self-conscious determination of what makes sense in a given context. But teachers cannot take charge—cannot fight off the routine of day-to-day teaching—unless conditions in their environment encourage it. Specifically, they must be freed from being directed. And the issue I raise here is whether we in NRC free teachers from being directed—whether we set conditions which encourage empowerment.

POTENTIALLY DISEMPOWERING PRACTICES

I do not think we do. What counts with us often gives teachers the impression that they should comply. So, despite our good intentions, we often engage in practices which are potentially disempowering. Three examples—expectations, situations, and knowledge—illustrate how this happens.

The Expectations We Set

One of the northern Michigan teachers got me thinking about the expectations we set when she said to me in an interview: ". . . because you want me to change, Gerry, implies a criticism of what I am." In short, I was making her feel that *she* had been doing something wrong, that *I* had the answer, and that *she* had to comply. Immediately she was placed in a psychologically unempowered position.

The problem. The attitude that we have the answers and that teachers should passively follow us is endemic to almost all teacher education efforts. We see it in the apprenticeship model (Brown, Collins, & Duguid, 1989) which, despite all its good immersion characteristics, expects the apprentice to emulate the master's actions in procedural and appropriately subservient ways. We see the same kind of "haves-and-have-nots" relationship in the expert-novice model in which we are the experts and teachers are the novices. We even see it in some teacher education reform movements in which university people are quick to go out into the schools to give the word to teachers but there is an embarrassing absence of a corresponding movement of school people coming to the university to give us the word.

There are two flaws in this arrangement. First, and most obvious, it is an elitist concept. We put teachers in a subservient social position. Lemke (1989) calls this "differential contextualization" in which the sense people make depends on their relative positions in the social structure. By placing teachers "under" researchers and literacy educators, we set an expectation that discourages empowerment.

The second flaw is the belief that we have the answers. We do not. The assumption that anyone—university people or school people—has all the answers in teaching literacy reveals an alarming naivete about the complexity of classroom life. Teaching generally, and teaching enriched forms of literacy in particular, is an inherently difficult task because it is dilemma-ridden. A teacher's attempt to create interpretive, problem-solving readers and writers cannot be reduced to the kind of rational directives which masters give to apprentices or experts give to novices. Buchmann (1990) describes this well, saying:

> Teaching . . . routinely involves multiple pairs of obligations—binding claims on one's attention—in which if one is satisfied, the other cannot be. Looking after one student who needs encouragement does not make the teacher's obligation to see to the learning of the whole class disappear. There is no simple answer to the question of how to honor the personal liberty of students while teaching them academic subjects, since disciplinary arguments must often override personal beliefs . . . . Philosophical and empirical studies indicate that such multiplying moral dilemmas are "resolved" in interconnected series of *imperfect decisions* [emphasis added] that bypass one horn of each dilemma and deal with any residues in the network later. (pp. 5–6)

It is in this context—one typified by daily encounters with dilemmas unresolvable by formulaic solutions—where teachers who develop enriched literacy live and work. Success does not result simply by following directives.

What is the alternative? The longer I work with the northern Michigan teachers, the more I think we must establish partnerships with teachers instead of directing them. In such partnerships, both teacher *and* researcher recognize that they are dealing with dilemmas and not solutions, and both take responsibility for accommodating research findings to the dilemmas.

Like all partnerships, this one demands mutual respect for the expertise each party brings to the endeavor. The NRCer's expertise is global and context-free conceptual knowledge about literacy and literacy instruction; the teacher's expertise is knowledge of the classroom and the dilemmas inherent in working in that classroom. Both parties possess expertise; neither party is subservient. Our first job is to insure that this mutual respect and honesty is in place.

The work of the partnership then proceeds on the understanding that teaching is a continuous process of getting smarter—similar to the existentialist notion of "becoming." Both the researcher and the teacher are fallible; neither possesses definitive answers; both are becoming; both understand that we don't ever get teaching right in any final sense of the word.

A dilemma here is how to establish a genuine partnership while simultaneously providing conceptual leadership—how to be collaborative while leading. I do not know the answer here, but I try to deal with it in several ways in the northern Michigan project. First of all, we establish from the beginning that teachers are to *adapt* what I say, not follow it. At first, the teachers did not believe it; they insisted on calling the staff development activities "Duffy's Program," and persisted in the expectation that I should provide directives. However, this has changed, perhaps because I frequently acknowledge that my insights are limited, that my own classroom experience was in contexts and times quite different from theirs, and that neither I nor anyone else has final answers. Second, I contextualize everything. My response to the question, "How do you do this?" is always the same: "It depends on the situation. How do *you* think it should be done? How can we adapt what we have been talking about to *your* situation?" Third, I make explicit that I am learning from *them*. One of the ways I do that is by having the northern Michigan teachers review all my papers and reports before I submit them, including *this* one.

But perhaps the most important thing I do is that I teach for them. One teacher reported, for instance, that her empowerment, to some extent, came from watching me struggle with the same thing she struggles with: "I think one of the things that helps a lot is to watch you teach a lesson. To watch that you're as human as the next person and that the kids react to you the same as they react to me and misbehave the same." This teacher was empowered by my fallibility. Knowing that I was imperfect, she was able to accept imperfection in herself; seeing that I did not have all the answers, she was freed to look for her own answers.

Summary. The message here was well stated by my Michigan State University colleague Bruce Burke (B. Burke, Personal communication, November 2, 1990):

> What is corrupting is the longing for a panacea, a final solution, after which by some magic there will be no problems to solve. There *is* no automatic program. Yet people keep looking for programmatic perfection, rather than reasoned approximation.

In short, we discourage empowerment when we give teachers the impression that there is a final answer out there and that their job is to comply with the directives of particular programs or particular people. Instead, we need to set an expectation for "becoming" and for self-reliance. We want teachers like the one who said to me in an interview late last year, "I feel more confident now in arguing with you about things," and like the one who said that "duking it out" with me in spirited professional debate was an important part of her becoming empowered.

I suspect this happens only when a researcher and teacher have a partnership in which both parties search for workable hypotheses and, in the process, value the expertise each brings to the endeavor, when the expectation is that putting research results to work in classrooms is a matter of imperfect participants working together on equal terms to get better at an inherently difficult task.

This is a difficult expectation for university people to set. The professoriate culture dictates that, by virtue of being a professor, I must not only possess expertise but I must also act the role of the expert—or, more specifically, I must convey that *my* expertise is the only expertise that counts. Humility seldom characterizes experts. But, as Buchmann (M. Buchmann, Personal communication, November 15, 1990) points out, humility is the heart of classroom teaching. As she says, teaching is a matter of ". . . knowing that there's always something—many things—you can't attend to right now, but you *ought to*, somehow, sometime. Regrets, errors, incompleteness of success are built into teaching as into life. Improvement is only possible if you see *that*."

Situated Learning

The way we situate the dissemination of our research findings also encourages teacher compliance. One of my colleagues at Michigan State recently summed this up well. She was suggesting that I give up traveling to northern Michigan and to substitute instead interactive television up-links which would allow me to stay on campus. When I replied that such technology does not help teachers use knowledge in their specific classroom contexts, she told me, "Yes, Gerry, but we're in the business of producing degrees here, and a degree means you've studied something, not necessarily that you can do it." The university enforces this view through a grading system which insures that participants—including preservice and inservice teachers—will comply.

This is a problem of situated cognition (Brown, Collins, & Duguid, 1989; Leinhardt, 1988; Resnick, 1987). In classrooms, for instance, we urge teachers to situate kids' instruction in authentic occasions for literacy—to immerse them in the act of being literate—because we know that children do not develop high forms of literacy unless they have genuine opportunities to engage in such activities.

The same principle applies if we want teachers to transform our research into usable practice. Our interactions with them must be situated in authentic activity—we must immerse teachers in the act of teaching enriched literacy. Studying *about* enriched literacy in the university immerses teachers in getting a degree; it does not immerse them in actions required to *develop* enriched literacy.

Examples of how situations mediate learning. The subtle power of situated learning on what teachers focus on was dramatized for me by two personal experiences.

The first is from my northern Michigan project. Because I am concerned about how teachers mediate teacher education, the staff development effort is conducted outside the parameters of the university. That is, the teachers do not sign up for university credit. Because they do not get credit, they do not worry about getting a grade. The task is not to accumulate grades toward a degree; it is to move target kids towards enriched literacy. Therefore, teachers mediate the staff development effort in terms of their individual classroom situations.

However, last year about six of the teachers who were pursuing Master's degrees at various universities in the state requested that I sponsor Michigan State University independent studies which they could transfer to their degree programs. I reluctantly agreed to do so as long as they all worked on developing portfolios documenting how they had moved their target kids towards literacy. In making this requirement, I reasoned that the teachers would continue to think in terms of their kids' progress toward enriched literacy.

I was wrong. As soon as they signed up for credit and began work on their portfolios, their focus changed. For instance, rather than asking questions about their kids' literacy learning, they asked how I wanted the portfolio organized, how many items needed to be included in the portfolio, whether it had to be typed, whether spelling counted, and so on.

This is because the university grading system forced the teachers to change their thinking about what counts. Before the independent study activity, what counted was the improvement of their target students; once they signed up for credit, what counted was making sure they got an "A" on the portfolio. They learned what I wanted a portfolio to look like; whether they became empowered teachers of enriched literacy is problematic.

The second example occurred several years ago when I was teaching preservice teachers. The program was long-term and field-based; that is, I taught an integrated reading-language arts course to the same group of preservice teachers for an entire academic year with all the sessions conducted in a Lansing public school and with all assignments embedded in their teaching a classroom literacy. I was excited about being part of this program because I thought the field-based situation would cause these preservice teachers to mediate my instruction in terms of how to help kids become literate, not in terms of getting a grade.

I was wrong. Although, as I had hoped, they understood that their grades were tied to their teaching, they also soon discovered that the teaching grade was determined by the number of "yeses" they were awarded when observed by my colleagues using a form which listed what research said effective teachers did when teaching literacy. Once they discovered this, the checklist became the primary mediator of instruction. That is, they concentrated on maximizing the number of "yeses" on the observation form; in the process, they became technicians rather than empowered teachers.

This is not unlike what happens in traditional student teaching. Contrary to popular opinion, this venerable practice is a major culprit in our failure to improve schooling because the name of the game is how to get a good grade, often from a cooperating teacher who represents the status quo. Thus, we perpetuate standard instructional practices.

An alternative. I am not sure what the alternative is here either, but the more I work with the northern Michigan teachers, the more I think that Lampert and Clark (1990) are right when they suggest case-by-case responses to teachers' practical problem solving:

> Studies of practical problem solving have led to questions about whether knowledge of principles, acquired in academic settings, is of much use to practitioners when they come face to face with particular problems . . . . Related work questions the extent to which expert practitioners actually hold knowledge in the form of distilled abstract principles, suggesting that the knowledge they use would be more adequately described in terms of a case-by-case response to the particulars of the problem they are trying to solve. (pp. 22)

This was dramatized for me the other day in northern Michigan. I was working with four teachers in one school on how to apply concepts about situating literacy instruction in authentic activity. The first teacher I worked with was a former high school science teacher in his first year teaching second grade; the second teacher I worked with was a former special education teacher trying to apply situated learning to a basal textbook unit in a third grade; the third teacher I worked with teaches a Joplin-grouped third grade and was trying to figure out how to create situated learning experiences when you only have the kids for 50 minutes a day; and the fourth teacher was a first-grade teacher who was trying to create purposeful literacy experiences for at-risk, rural 6-year-olds. Each teacher had access to the same knowledge during our class session, but each had a dramatically different teaching context; consequently, the task of *using* the knowledge was dramatically different for each of them. To help them be empowered by research findings about situated learning, I had to help them transform *our* findings into *their* case-by-case situations.

This, of course, is the point of situated learning. We must find ways to situate our research findings in authentic teaching contexts because that's what is real for teachers. As one teacher pointed out:

> I don't think I could have done this without help. We can go to the classes and come back in the classroom but none of those changes would have been made if I didn't have you in my classroom and really talking about it . . . . Even though in my mind

> I thought I knew what I was doing, talking about it with somebody and discussing it, you find it isn't always great or the way it should be.

In other words, the way it sounds in *my* staff development session is seldom the way it works in *her* classroom.

There are dilemmas here, too, of course. First, in genuine situations, learning tends to be conceptual rather than superficial. As such, it requires an extraordinary amount of time. For instance, one teacher, talking about her improvement during her second year in the project, said, "I don't think I could have improved like that [last year] . . . I don't think you can do it in one year." This makes one question how much change can be expected in a semester-long course.

Another dilemma is that, in genuine situations, the transformation process is continual and iterative. That is, teachers are constantly "becoming." For instance, one teacher and I, at the end of her first year in the project, were still thinking about how she could use what she had learned about meaningful reading and conceptual understandings while simultaneously maintaining high scores in the state assessment test and assigning grades according to school policy. Another teacher and I, in the same building but in her second year, were still transforming knowledge about metacognitive strategy use into a context dominated by concern for literature content. This, too, is unlike university courses where we act as if learning to teach is tied to clear-cut beginning and ending times. In actuality, knowledge transformation is a longitudinal process of continued transformations as teachers and those trying to help teachers struggle to make knowledge useful in specific classroom situations.

Summary. What I am suggesting is that we examine how we situate our work with teachers. This is not to say that teachers should do *no* university work. Obviously, some important learning can occur *only* in the comparatively sheltered environment of academe. The dilemma, of course, is deciding what work should be situated in the messy world of real classrooms and how that work can be freed of the institutional forces which act on teachers' learnings in miseducative ways.

I have no illusions about our ability to do this. Although medical interns and residents accomplish genuine situated learning in cutting edge teaching hospitals that operate outside the university's system, our commitment to university life is so deep-rooted that I doubt our desire to work outside its warm nest. But I do not see how we can empower teachers when the task is to get a degree which certifies you have studied *about* enriched literacy instead of getting a degree which certifies that you can *develop* enriched literacy in kids. If the principles of situated learning are valid, we must get teachers into teaching situations where they are responsible for developing enriched literacy; keeping them in student situations only helps them learn to pass our tests, to write our term papers, to make our journal entries, and to engage in our discussions. It does not necessarily help them develop enriched literacy.

Knowledge in Teacher Education

Once we start thinking in terms of authentic teaching situations, we are forced to think differently about what knowledge to convey. This is because, in real classroom situations, it quickly becomes apparent that an idea or theory or procedure is appropriate in practice only if it fits the situation.

Typically, however, we convey inert forms of declarative and procedural knowledge as if they were universals. We further complicate the situation by couching our arguments for one or another theory in polarized positions. The endless argument over direct instruction versus whole language is a prime example.

Polarizing arguments may help scholars clarify positions. But when we talk to teachers in these terms, it is frequently misleading. In real classrooms, for instance, it is seldom a choice of Vygotsky versus Piaget, of immersion versus nonimmersion, of direct instruction versus whole language, of automaticity versus metacognition. To the contrary, sometimes automaticity is important; at other times, metacognition is important. It depends. Even "teaching and learning for understanding" is not immune. Most of us who spend a lot of time in classrooms know that there are times, though rare, when the situation calls for "teaching and learning for memory." It depends.

But we do not teach teachers about "it depends." Instead, we make teachers feel like they must adopt one position to the exclusion of others. I convey my theory as if it were *the* theory when, in actuality, it is simply *a* theory among other conceptual frames potentially useful to teachers dealing with complex problems. Whether it is useful in a given situation depends on circumstances.

We do the same thing with procedural knowledge. We give teachers "research tested" lesson plan formats, activities, heuristics, instructional techniques, and handy hints. We tell them to do mental modeling (Duffy, Roehler, & Herrmann, 1988) or to implement reciprocal teaching (Palincsar & Brown, 1984), giving the impression that these are universal panaceas. Teachers love this, of course. They think they are getting something practical. But, unless they also know how to decide when to use it and when not to, they are nothing more than technicians following a procedure indiscriminately. And, of course, it does not always work because the context changes. Like theory, a particular procedure may or may not be appropriate—it depends.

The point is not that we should not present declarative knowledge about our theories and procedural knowledge about tested techniques. The point is that such knowledge alone is too narrow for teachers working in the complexity of real classrooms. My friend Margret Buchmann (M. Buchmann, Personal communication, November 15, 1990) says it well when she describes the power of theories and procedures in terms of uni-directional searchlights throwing intense light on a *bit* of land in *one* direction while remaining blind to what's happening on other land in other directions. This does not work for teachers because teachers do not enjoy the luxury of being uni-directional—they must take action on *all* lands and in *all* directions. In effect, we have theoreticians operating from positions uncontaminated by reality trying to teach practitioners who, by definition, must modify all theoretical positions to accommodate the contamination inherent in the complexity of classroom reality.

An alternative. So how do we help teachers understand the "it depends" concept? How do we help them learn to select from a broad range of knowledge depending upon the nature of the situation? How do we help them develop "conceptual selectivity"?

The more I work with the northern Michigan teachers, the more I think we *do not* do it by emphasizing declarative knowledge about theories or by prescribing procedures. I think we may do better by teaching teachers multiple alternatives, by teaching them how to network these so they can be accessed appropriately as needed, and by helping them understand that teaching demands fluid, multi-dimensional responses to an infinite number of classroom situations, not narrow, uni-directional responses.

I am not saying that we should not ground teachers in theory. I work hard to ground the northern Michigan teachers in social constructivism (Gavelek, 1986), situated learning (Brown, Collins, & Duguid, 1989; Leinhardt, 1988; Resnick, 1987), cognitive mediational paradigms (Doyle, 1983; Winne & Marx, 1982) and cognitive and strategic approaches to literacy (Anderson & Pearson, 1984; Paris, Lipson, & Wixson, 1983). But, I do not want teachers to learn the terminology or follow the procedures associated with these theories. I want them to see "the point" of a theory or procedure, when it would be applicable and when it would not, and to select among theories and procedures according to their judgment about what the situation calls for. As Gavelek (J. Gavelek, Personal communication, November 20, 1990) points out, this itself may be a theory, but it is a theory grounded in what teachers actually have to do in the reality of classrooms.

In accomplishing this, I am much less didactic than I used to be about doing it my way. And teachers' perceptions play an increasingly more important role. They put limits on my favored theories and procedures, make me more sensitive to the realities of situational constraints, help me understand the difficulties of "conceptual selectivity," and keep reminding me that the measure of success is kids.

This is not to say that it is easy for teachers to become conceptually adaptive. One of the northern Michigan teachers, for instance, told me about "that little voice," as in "that little voice started whispering in my ear; you know that little voice, Gerry? The one that tells you to teach word cards when you know you should be developing positive attitudes?" What happens is that teachers' conceptions based on their 13 years of experience as school children and their years of experience as teachers pushes them toward conventional practices and away from conceptual adaptivity.

Quieting that little voice of experience is often a painful and sometimes emotional process. For instance, one group of teachers reported during a gathering of the intellectual community of teachers in that building:

> We expected to come [to the monthly sessions] and learn things that would challenge us. But we didn't expect to be upset. But when we go back [to our school], we're angry, and mad, and churned up inside. It makes us mad.

And another teacher who was the subject of one of my case studies said, after reading my description of her work last fall, "I don't mind telling you, Gerry Duffy, that I thought about [that case study] and I thought about it; then I burned it."

Summary. Knowledge, like expectations and situated learning, is dilemma-ridden. It is a fine line between devasting teachers and opening them up to the possibilities of empowerment; it is a fine line between directive forms of declarative and procedural knowledge and the development of personal positions; it is a fine line between the "it depends" concept and an "anything goes" approach to teaching; it is a fine line between conveying our theoretical position as the only position and clarifying our position for teachers.

But, despite the dilemmas, we must get beyond giving teachers the impression that the key to effective instruction is compliance with our favored theories and our favored techniques. We must instead convey the much more complex reality that what is useful usually depends on the situation. Consequently, we must help teachers understand what a theory or procedure is good for, when it might be useful, and how to make those decisions, rather than making teachers into what Buchmann (M. Buchmann, Personal communication, November 15, 1990) calls "ideological camp followers" who *adopt* a theory or procedure regardless of circumstances.

CONCLUSION

So, what are the implications here? First, I reiterate that I am *not* proposing answers.

What I *am* saying is that there are complex dilemmas inherent in our attempts to help teachers. We in NRC must confront those dilemmas.

We cannot avoid this by hiding behind the old argument that translating research findings into practice is someone else's job, someone like a teacher educator. In the first place, such a notion is just another example of elitism, of creating yet another layer in a caste system which puts teachers at the bottom of the pile. And secondly, it is not honest. We may be researchers, but we also are all teacher educators. That is, we all talk to teachers, have teachers in our courses, write articles and books for teachers, do speaking engagements for teachers, consult with teachers, and write commercial materials for sale to teachers.

I have argued here today that, for openers, our teacher education responsibility requires us to confront whether we empower teachers and our responsibility for doing so. True, we cannot *demand* empowerment; ultimately, individual teachers must decide to take charge. But they will never decide unless we lay appropriate groundwork. Again, my friend Bruce Burke (B. Burke, Personal communication, November 2, 1990) says it best: "Empowering teachers means creating the conditions in which teachers can make up their own minds, do their own best work, and define their own context."

Do we do this? Do we invest in the minds of teachers? Do we help them make up their *own* minds, do their *own* best work, define their *own* context? Or do we invest in theories, programs, and procedures in the expectation that teachers will compliantly follow?

I am further arguing that if we choose to invest in the minds of teachers, we must make a fundamental shift from faith in simple answers, from trying to find simple solutions, simple procedures, simple packages of materials teachers can be directed to follow. Instead, we must take a more realistic view, one which Roehler (1990) calls "embracing the complexities." She argues that the way to improve strategic reading instruction, for instance, lies not with developing techniques which ignore the complexities or by following procedures which screen teachers from the complexities. Rather, the complexities are themselves the heart of the matter. Consequently, teachers should be encouraged to capitalize on the complexities rather than being protected from them.

But once you embrace the complexities—that is, once you begin to understand that improved practice does not result from attempts to convert an inherently complex situation into an artificially simple one—virtually everything else about how to improve practice is altered.

For instance, what counts as progress is altered. We talk glibly in university classes about whole language and literature-based approaches, but I have learned that in real classrooms huge changes like those are rare. Instead, for a 20-year teacher who has an established set of routines which effectively accounts for the complexities of teaching 28 kids a variety of subjects in limited time under the gun of the state assessment test in a context where compliance with policy mandates is expected and in school districts where virtually every bond issue is voted down, a huge change is moving from not providing any sustained silent reading time at all to trying it out for 10 minutes 3 days a week.

Similarly, you change your concept of how much time is enough time. In our northern Michigan project, we thought we were pretty enlightened to think in terms of a 5-year staff development effort. Auleen Lutes and I are now beginning to understand, however, that it is naive to think about change in terms of individual teachers; we are now beginning to understand that change occurs in communities of teachers who operate within a school culture where practices are embedded as mores and in which substantive change is not realized until the community as a whole replaces the established mores—until, in effect, the change itself becomes a more in that culture. In light of that, a 5-year staff development plan for northern Michigan was pretty naive. It may well take *10* years to effect the instructional change which will result in widespread development of enriched forms of literacy in these rural Michigan school districts. In short, the day of the "quick fix" is over (if, indeed, it ever was appropriate).

But embracing the complexities also means our research must change. Up to now, we have been asking basically simplistic questions about "What works?" in hopes that we will discover directions, prescriptions, procedures, or programs we can direct teachers to follow. Such research fails to impact practice because it is based on the assumption that literacy instruction is primarily technical work. Instead, our research must be guided by the understanding that literacy instruction is, first and foremost, intellectual and moral work. This changes our research questions in fundamental ways.

But, more fundamental still, we need to open up a whole new frontier of research, one that critically examines *our* practices. We are researchers. We study all sorts of literacy-related issues. However, although some of us are beginning to follow Lampert's (1986) example by studying our practices as we teach kids, few of us study our practices as we teach teachers. But, since some of the worst instruction occurs in university settings, it is not unreasonable to think that part of our failure to improve school literacy instruction lies with our own teaching of teachers. This may be because most of us received little instruction on how to work with teachers as part of our doctoral work. As a result, we emulated standard practices of the past. I taught like my major professor taught; he taught like *his* major professor taught. We took our teaching for granted; we never considered the possibility that perhaps university teaching and staff development is also complex; that perhaps working with teachers is as dilemma-ridden as working with kids. But if we wish to empower teachers, we must bring our analytical skills to bear on our own work with teachers, on what our practices contribute to a teacher's empowerment and, on the basis of that, alter our own teaching practices.

So, in the end, I do not have answers. I only have dilemmas—dilemmas about how to put teachers in charge of their own work so that masses of at-risk kids achieve enriched literacy. My only real hypothesis is that we cannot wait for someone else to show us the way. Only when we begin studying *ourselves* and the messages we convey can we empower classroom teachers to empower kids.

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THE LEGACY OF "SLOW IT DOWN AND MAKE IT MORE CONCRETE"

Richard L. Allington
State University of New York at Albany

This is not a traditional review of the literature, even though such a format has been the common practice for the annual review. It is not a traditional literature review for a number of reasons, but primarily because the research on individual differences in literacy acquisition is so large as to virtually defy any attempt at a comprehensive summation. This paper does present an historical review of how a single conceptualization of individual difference has dominated our thinking and resulted in school practices that virtually ensure that large numbers of children will never view themselves as readers and writers. This paper is more a brief for needed change, I suppose, than a literature review, but it is in tracking the research literature that I illustrate how the dominant view emerged and, ultimately, became entrenched as "conventional wisdom." It is the legacy of educational research that now ensnares all of us.

Efficient Schools and Scientific Reading Programs (1910–1930)

At the turn of the century free public schooling was finally available to virtually all. The modernists sought efficiency. To accomplish this, school districts were formalized and small school districts were consolidated as the "economy of scale" position moved to the forefront of educational practice. The new, larger elementary schools were then organized into graded schemes, and standard curricula for each grade were developed.

There was one small problem that was observed almost immediately: not all children learned everything they were supposed to learn at each grade level. In his classic book, *Laggards in Our Schools*, Leonard Ayres (1909) delineated the problem and offered an emotional argument for differentiation by individual aptitude and manner. It was not fair, he argued, to hold all children to the same standard since, obviously, not all were meant to be scholars. He reported that one-third of the first-grade students were retained for failing to meet grade level standards but asked whether it was the child or the curriculum standards that were at fault. Ultimately, of course, American education opted to accept his argument, and thus began the search for the most appropriate techniques for differentiating instruction and for setting differential educational goals.

This was the era of the "scientific" movement in education and education research (Shannon, 1989). It was during this period that skills hierarchies as models of the reading process gained favor and when the refinement of these began. It was also the era in which work on the development of intelligence and achievement tests began (Corno & Snow, 1986). Basically, the "scientific" movement in literacy education thrust forward with a three-pronged attack. The first was the attempt to delineate appropriate and different goals for different learners. Thus began the idea of the three reading groups, each with different goals for curriculum coverage (Barr & Dreeben, 1991). A second thrust was the scientific delineation of curriculum which resulted in the development of the modern basal reader series with more detailed teacher manuals. These were seen as an efficient means of disseminating the new knowledge about teaching reading. They were accompanied by the innovative "pupil practice pads" (workbooks) which were seen as a necessary component of the new curriculum (Langer & Allington, in press). The third thrust was the evolution of the concept of diagnosis of reading acquisition difficulties and the selection of appropriate remediation techniques (Johnson & Allington, 1991).

The net effect of these various efforts was the creation of a conventional wisdom that full literacy was obtainable by only some and that lesser literacy goals were appropriate for substantial portions of the population. This conventional wisdom of limited literacy was translated into an expectation that not all children could or should be expected to learn to read on schedule with their peers—that the normal curve distribution was in fact the appropriate target for schools. W. S. Gray (1919, 1925), perhaps more than any other reading professional, was at the forefront of these developments as he edited yearbooks of the National Society for the Study of Education, created the best selling basal series of that period, and produced the first standardized reading tests (1915).

It was near the end of this period that the concept of "slow learners" emerged; slow learning was viewed as limited aptitude as defined by performance on the new tests of "intelligence." Research into diagnostic procedures was by now well established and the differentiation of "remedial" readers (children who would benefit from intervention), from slow learners (children who would not), became a matter for substantial study. The primary strategy of slowing the pace, delineating specific skills deficits, and teaching components of the reading process separately and in isolation became standard practice in remedial instruction, as had the practice of employing teaching methods different from those used in the classroom. Even then, however, these practices generated skeptical reactions. Arthur Gates (1927) offered one of the harshest attacks:

> some of the worst devices and most inadequate teaching methods are to be found in remedial reading instruction for pupils who, precisely because they have had difficulties with the subject, are most in need of the best possible teaching. The fact is that remedial teaching should follow the same general principles of learning that are, or should be, observed in any other type of instruction . . . . (p. 19)

By 1930 the scientific movement had had an enormous impact on the way both learning and teaching of literacy were viewed. Reading curricula were standardized in basal readers, and the roles of teachers' manuals and workbooks continued to expand. Reading groups were viewed as an appropriate means of differentiation for students of differing aptitudes. Standardized tests of aptitude and achievement were available, as were diagnostic tests. A few remedial programs were being developed, and the clinical model was in full bloom in American universities. All in all, a path was being blazed, a path that would be so well traveled that it would become an expressway over the next half-century.

The Sorting Machine Emerges (1930–1950)

It was in the 1930s that a new generation of reading researchers emerged, a generation that built upon the base established earlier and extended the concepts that became conventional wisdom. Appropriate instruction for the slow learner and the remediation of reading difficulties in children with adequate aptitudes but inadequate achievement were focal issues. Edward Dolch (1931), Marion Monroe (1932), Emmett Betts (1936), Albert Harris (1940), Samuel Kirk (1940) and Donald Durrell (1940) all published texts addressing the issue of providing for individual differences in literacy learning. Helen Robinson (1946) and Grace Fernald (1943) followed shortly after with their treatises on learning difficulties. Each of these leading researchers applied a similar conceptual framework in addressing individual differences in literacy learning, a framework that, by and large, reflected "slow it down and make it more concrete" strategies.

Three features define this approach. First, the idea of slowing the pace of instruction was often offered within the framework of covering basal reading material. It was seen as appropriate to establish something less than coverage of a full year of basal content. Linked to this was the concept that more attention should be devoted to skills mastery, often in shorter lessons with a more limited focus. Trying to cover too much material, too quickly, was seen as one of the major difficulties to be addressed. Betts (1949) noted that, "Many children experience varying degrees of frustration . . . when they are forced to move forward too rapidly." Second, the concept of making the tasks more concrete became popular. This meant isolating the components to be learned, relying more on oral reading activity than silent, and linking pictures and words on flashcards. Dolch (1931) suggested that:

> Methods in word recognition that other children pick up by themselves must be taught to these slow minds. Attention to individual letters amounting almost to a spelling method may be necessary. Reading material must remain very simple and childlike. (p. 248)

Finally, repetition was seen as absolutely necessary as slow learners required far more trials to master words, for instance, than other children. Here Kirk (1940) details some necessary elements of the process:

> adapting the reading periods by prolonging the period of each stage to conform to the slow learning ability of the child . . . giving more repetitions in a variety of presentations . . . . (p. 38)

It was during this period that the "slow it down and make it more concrete" framework truly became the conventional wisdom. Although the initial focus had been on defining appropriate instruction for children with limited intellectual abilities, by the end of the era this framework had been accepted as the basis for differentiating instruction for all children who were experiencing difficulty. In fact, difficulty in reading became a defining feature in the identification of slow learners.

The first half of the twentieth century had brought substantial changes to American elementary education. Reading was transformed from a moral virtue to a cognitive skill. Compulsory school attendance became universal, and the age of attendance was extended. The influence of the school efficiency proponents had led to the creation of consolidated school districts, the graded school, and the centralization of curriculum development. It was the era of the school as the sorting machine, whereby schools were charged with sorting children into appropriate curricular and career paths (Spring, 1989). It was the era of the rise of psychometry in defining individuals and of reductionism in defining curriculum. It was within this larger framework that reading instruction came to be defined as skills acquisition and that the use of differential goals, methods, and materials for different learners became accepted policy. It was during this period that reading research expanded significantly, and it was a time when a small group of researchers became nationally visible as reading experts. This group was to remain as the primary leadership to the profession through the next half-century.

The Sorting Machine Refined (1950–1970)

The framework for viewing literacy learning that had been shaped in the first half of the century, and the proponents who shaped it, continued to dominate throughout the next period as well. The 1950s in American education were a conservative period, mirroring society. The role of the school as a vehicle for matching student aptitudes with appropriate curricular experiences and goals was expanded with the advent of vocational and special education programs. Admiral Hyman Rickover championed special curricula for the gifted student, and advanced placement math and science curricula were urged, in no small part due the Soviet launching of the Sputnik satellite in 1957 (Spring, 1989). Rudolph Flesch (1955) hammered away at sight-word approaches as the methods from hell and challenged the established curriculum and the low level of literacy exhibited by too many children.

It was in this period that the International Reading Association and the National Reading Conference were both formed, and reading methods courses, reading professors, and reading departments emerged on campuses across the nation. Remedial and special education, both of which had shared roots in the slow learner conceptualization, developed as separate entities. Slowly the institutional machinery was developed that would lead, ultimately, to two different professional fields: remedial reading and learning disabilities. The institutional machinery was the work of a variety of federal legislative and regulatory initiatives. The first was the National Defense and Education Act of 1958 (NDEA) which funded programs for improving testing in the schools and for developing counseling and guidance programs to assist in the sorting of children into appropriate career tracks (Spring, 1989). Then came the Elementary and Secondary Education Act of 1965 (ESEA) which created the Title I compensatory education programs for educationally disadvantaged students (McGill-Franzen, 1987). The ESEA institutionalized reading teachers in the elementary school and fostered the expansion of graduate programs focusing on the preparation of reading teachers. The federal support for educational research and development laboratories under the ESEA resulted in the creation of "linguistic" reading programs, programmed readers, skills management systems, and atomistically specified decoding skills hierarchies (Langer & Allington, in press).

The plight of children, especially minority children, in large urban school systems was brought forth by John Holt (1964) and Jonathan Kozol (1967). Expectations for literacy teaching and learning were at the center of the debate. Jeanne Chall (1967) echoed the earlier call for attention to decoding but, at the same time, also raised the question of the role of expectations. This was the era of initial challenges to the concept of "appropriate differentiation" of literacy instruction. Questions about the "pygmalion effect" formed the basis for reconceptualizing the role of individual differences in literacy acquisition. The ESEA, with its compensatory focus, also fueled reconsideration of the adequacy of previous conceptualizations. It suggested that perhaps unique educational interventions could compensate for environmental disadvantage and, thereby, raise the target for the "appropriate" outcome goals. Better, more frequent testing gained prominence because it could lead to better matches between student aptitude and literacy goals.

Individualized reading arrived in two quite different packages. Jeannette Veatch (1959) offered a vision of individualized reading that emphasized the use of tradebooks and self-selection of these books by children. The individually prescribed instruction (IPI) version of curriculum offered by Coleman (1970) was based on specific skills mastery and monitoring. In the end something more like IPI won the hearts of the education establishment, and individual differences were seen as amenable to identification through systems of skills acquisition monitoring.

This parts-to-whole view of literacy teaching and learning dominated state education departments and federal research laboratories. Basal publishers rushed to create their own versions of mastery tests and individualized skill monitoring programs. In the end, schools opted for literacy curricula that deemphasized student choice and emphasized fixed sequences of objectives that students were to master. Individual differences became defined primarily as differences in skills acquisition progress.

The Sorting Machine Reconsidered (1970–1990)

The increasingly atomistic definition of the literacy curriculum may have had an unexpected benefit, at least in terms of fostering reconceptualization of schools and literacy learning. Benjamin Bloom (1976) argued that although there was little "doubt that selection of talents is a much simpler and more efficient process than the creation or development of talents . . . ." (p. 210), it was also the case that equality of learning was possible, and thus schools should focus less on the selection function and concentrate more on the development of talent. Mastery learning was ushered onto the educational agenda and the historical definition of educational equity was challenged.

Since the turn of the century, educational equity had been defined primarily through comparisons of educational inputs. Fairness was achieved when all children had access to education of roughly equivalent quality and quantity. In fact, one of the premises of the ESEA was the redistribution of money from wealthy areas to impoverished areas—to move funds into poor school districts so that they could offer educational services of comparable quality to wealthier districts (McGill-Franzen, 1987). Much of the function of PL 94-142, the Education of All Handicapped Children Act of 1975 (EHA) was to codify the legal rights of the handicapped to access to a free and appropriate public education and to provide the institutional machinery to ensure that such educational services were made available. The EHA also codified curriculum as specific skills sequences, in line with the prevailing definition. The required "individualized educational plan" was to provide specific instructional objectives as the curricular goals for handicapped learners.

John Carroll (1963) had begun this with his model of school learning that emphasized the role that access to instruction, even crudely measured as amount of time available for instruction, played in school learning. Perhaps because units of time were more easily measured than other components of his model, a substantial research accrued illustrating that different learners could achieve similar learning if instructional time was varied appropriately for the learners (Denham & Lieberman, 1980). A second line of research demonstrated the potent effects of allocations of instructional time on learning, and especially learning to read (Wiley & Harnischfeger, 1974). Slowly a view was emerging that equality of learning was an attainable outcome—that individual differences did not demand differential goals for literacy learning.

A third line of research developed that illustrated how differences in educational environments did, in fact, lead to differential outcomes. However, the thrust of this research was to show that the patterns of differentiation that had evolved across the previous half-century (1930–1980) produced educational environments that were disabling the very learners they had been designed to assist. Jean Carew and Sara Lightfoot (1979) suggested that perhaps what had been considered differentiation was actually a form of discrimination:

> But after assigning children to these [ability] groups, she proceeds to treat them differently and thus create a differentiation that was almost invisible before. These differences are reinforced over time as the groups receive different reading assignments and respond to slightly different pedagogical modes. . . ." (p. 148)

Building on these efforts both Hiebert (1983) and Allington (1983) provided careful descriptions, drawn from the research, of the differences in classroom instruction of higher and lower achieving readers. The slower pacing of instruction, the focus on oral reading, the greater time spent on skills activities, as well as the differences in interactional patterns, all were argued to contribute to the impaired or inefficient reading processes displayed by lower achieving children. Thus the patterns of instruction that had historically evolved from a concern for attending to individual differences were now identified as potential sources of many of the differences that were observed. Rather than fulfilling a useful function, these instructional differences were seen as limiting the development of the very children they were supposed to serve. Rohwer (1980) had asked the relevant question in terms of smart and slow students:

> What if the smarter student proceeded by a method other than the one we have presumed? What if the procedure followed by the smart student was incompatible with the procedure I imposed upon the slow student? . . . If so, the more effective my instruction in inducing the slow student to adopt the recommended procedure, the greater its potential for retarding his progress. At least in principle, then, instruction that is indisputably well-intentioned can nevertheless set a student on a dead-end road." (p. 37)

Questions about the appropriateness of the "slow it down" framework expanded, and ultimately central elements of that framework were indicted as perpetuating and exaggerating individual differences in literacy acquisition (Stanovich, 1986). Referring to the now widespread use of specialist teachers in remedial, compensatory, and special education programs to address the individual needs of the several federally defined populations of low-achieving children, Good (1983) noted that, "it is unfortunate that students with the least adaptive capacity are asked to make the greatest adjustments across the school day" (p. 48). He was referring to the common use of different curricular materials in instructional support programs. In these cases the participating children are often exposed to multiple literacy curricula, often curricula representing divergent theories of the reading process. This common situation occurs in applications of variations of the learning modalities hypotheses, but results in low-achieving learners confronting a potentially incoherent array of curricular emphases, activities, and goals (Johnston & Allington, 1991).

The research on these remedial and resource programs provides evidence that participating children more often received less instruction and lower quality instruction than their nonparticipating peers (Allington, 1991; Allington & McGill-Franzen, 1989). In addition, little evidence was available that specialist teachers in these special programs actually individualized instruction. Rather, they provided a "routinized" instruction that was similar and predictable for all students they worked with—students had to fit the routine (McGill-Franzen & Allington, 1990). Low achieving students, then, moved from teacher to teacher, classroom to classroom, literacy program to literacy program, and they had to fit into the program offered rather than being offered a coherent program that fit. This has left most who study these special programs with the same sense that Milofsky (1974) had, that there was little that seemed special about the special programs.

The Legacy

We now near the end of a century dominated by the "slow it down and make it more concrete" framework for thinking about individual differences and their role in literacy acquisition. I would offer, then, the following as the legacy of that framework:

1. The dominant design for organizing instruction is the skills hierarchy, and skills deficit is the dominant pattern for thinking about individual differences in literacy acquisition. This framework has created a fragmentation of literacy learning and focused our attention and energies on trivial detail.
2. The pace of instruction is slowed for some learners, incredibly by design, thus ensuring that they will not develop literacy on schedule with their peers, if ever. The pace of instruction is also slowed by the use of multiple, and sometimes competing, curricular emphases in different programs serving the very learners who need the most coherent curriculum organization.
3. Though individualized instruction is the raison d'être for remedial and special education, individualized instruction has come to mean working alone on the same worksheets as everyone else. Mastery learning has come to mean doing the same worksheet alone over and over until you get it right.

4. Though it would seem sensible to suggest that some children need longer and better literacy instruction to fully develop their potential, we offer instructional interventions that are more likely to reduce literacy learning time than to expand it.
5. Our current system reduces professional responsibility for children who find learning to read difficult. As these children arrive at school the framework allows them to be sorted into the immature/at-risk/disadvantaged/learning disabled category. Once sorted, expectations for them are lowered, and no one is responsible for their difficulties. As we offer them up to special programs, the responsibility is further fragmented until, finally, the child is found to be responsible for the failure to thrive.

The legacy seems to fulfill Neal Postman's (1970) inflammatory charge that, "Teachers of reading comprise a most sinister political group, whose continued presence and strength are more a cause for alarm than celebration" (p. 244). For all of the rhetoric about the Right to Read decade and initiatives, American children still have no right to be taught to read (McGill-Franzen, 1987). For all of the money and energy expended on remedial and special education programs, there is scant evidence these programs serve children well, though they do seem to serve the needs of schools. For all of the undergraduate and graduate reading education courses that have been completed, there are too many children who still find learning to read difficult. It is this legacy that should convince us to move off the now well-traveled path and explore the alternatives.

Development Versus Identification (1990–2000)

It is now clear that we have alternatives to the "slow it down and make it more concrete" framework that has dominated literacy research, curriculum, and instruction (Knapp & Shields, 1990). There does not have to be a bottom group. In fact, we can achieve full literacy by redirecting the energies and monies we now spend on identification and separation to development of individual talent and integration. We can create extraordinary educational interventions that accelerate the literacy acquisition of the children we now place at-risk. We can teach all children to read and write, but to do so we must first reject the "slow it down" mentality, and we must reject the premise that equity is adequately defined by leveling educational inputs. We must be willing to accept the responsibility to provide children with access to sufficient instruction to allow them to become literate with their peers (McGill-Franzen & Allington, 1991a, 1991b).

We now have several demonstrations of the potential effects of providing some children with extraordinary educational interventions. The work of Marie Clay and her Reading Recovery effort (Clay, 1985; Pinnell, 1989) is a primary demonstration of what early intensive intervention can accomplish. But so too are the efforts of Slavin and his colleagues with Success for All (Slavin, Madden, Karweit, Livermon, & Dolan, 1990), Levin and his Accelerated Schools (Levin, 1987), Comer and his Yale-New Haven project (1988), and so on. What these efforts illustrate is that there doesn't have to be a bottom group, even in poor urban neighborhood schools. And yet far too many reading professionals continue to believe in the legacy of the normal curve.

Beliefs may well be the most critical factor that must be addressed (Borko, Livingston & Shavelson, 1990). I would argue that beliefs drive instruction and instructional design, and that it is the powerfully held conventional wisdom that now limits our progress. How else can one explain the research on the organization and delivery of classroom reading instruction that illustrates the disadvantage experienced by low achievers? What else can account for the design of remedial and special education programs that are more often organized for perpetuation of low achievement than organized to accelerate literacy acquisition? How else can we explain the enormous recent expansion of retention in grade and special education placements (Allington & McGill-Franzen, 1991; Shepard & Smith, 1989)? It is, I suggest, continued adherence to the "slow it down and make it more concrete" framework and its powerful limiting effects that perpetuates practices that have demonstrated negative effects for literacy acquisition in children.

It is time for us to reflect on the too often unexamined beliefs that currently dominate our talk and thought about literacy acquisition. These beliefs drive our current policies and programs, in our schools and in our state and federal education agencies. I have no easy answer to all of this. The conventional wisdom that has evolved across this century is too deeply ingrained in our society and our profession to be easily dismissed. However, our conceptions of literacy learning have changed, and so too have our research questions and methods. Perhaps we can undo the legacy of the past and reject the longstanding conventional wisdom that has brought us to this point. For nearly a century we have had a too limited view of the potential of children and of the power of instruction. There are alternative frameworks, and the time has come to develop those with the same intensity that our predecessors developed the legacy they left us. Perhaps these can be the legacy our generation leaves for those who follow us.

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CRITICAL PEDAGOGY, POSTCOLONIAL POLITICS AND REDEMPTIVE REMEMBRANCE

Peter McLaren
Miami University

In this article I have attempted to present a critique of existing approaches to literacy education and a possibility for rethinking literacy and schooling from a perspective called "critical pedagogy." Although this paper does not directly address theories of literacy, its discussion of the relationship among language, meaning, and memory will, I hope, have significant implications for theorizing and teaching reading. The essay centers around the work of Brazilian educator Paulo Freire and extends his ideas so they enter into conversation with the discourses of poststructuralism and deconstructionism. I invite teachers to evaluate the relevance of Freire's contribution to literacy and my treatment of his work for the field of reading.[1]

THE LEGACY OF PAULO FREIRE

Many in the United States today feel increasingly hesitant about our educational system, yet feel more cause for apprehension about the direction of the culture. It is no exaggeration to describe the present historical juncture as perilous and challenging: as a time of political guile and improbity, of moral instability and social injustice, and yet a time when new possibilities present themselves for reversing the direction of a democratic system which for the last 8 years has been in steady retreat. In short, we are facing, with a mixture of optimism and deep unease, a disenchanted modernity and the dawning of a portentous new postmodern epoch of shifting paradigms, degenerating borders, and the breaking apart of familiar dichotomies of thought. In the geopolitical world arena, with its industrial and corporate coefficients and the encroachment of multinationals, the meaning of global citizenship is being refigured. The image-producing possibilities of global media, the most powerful controlled by a few multinationals, are creating monopolies of information, and also empires of consciousness. It is within such empires that the meaning of literacy is taking on a new immediacy.

Media literacy that is electronically produced is more difficult to evaluate and to resist than print literacy, and there is no question that both types of literacy are in crucial ways mutually constitutive. Although this essay is primarily concerned with print literacy, its implications for a pedagogy of media representation are evident.

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[1] Parts of this essay appear in sections of more elaborate and detailed discussions of Freire's work. See McLaren & Tadeu da Silva (forthcoming), and a forthcoming essay in *College Literature*.

At this historical juncture, one at which illiteracy rates in the United States and Brazil are increasing and everyday cultural life in many countries is witnessing a postmodern flight from historical meaning, the work of Brazilian educator Paulo Freire takes on increasing importance. Nearly 20 years since his exile from Brazil and after years of international recognition for his literacy work, Paulo Freire has returned to Sao Paulo and is engaged in a literacy training campaign called Mova Sao Paulo (Torres, 1990). This is a gratifying turn of events for a man whose classic book, *Pedagogy of the Oppressed* (1970), is still revered by educators as a revolutionary landmark text, both in Third and First Worlds. Freire's vision and special calling to the project of emancipatory political praxis through critical literacy has made him an extraordinary scholar/teacher. In an epoch permeated by global mechanisms of oppression, Freire exhibits courage and persistent commitment to freedom and social justice. Despite the power in his revolutionary project of social transformation, his work runs the risk of being reconfigured by liberal educators working within the dominant paradigm of social sciences who view him as a benevolent father and benign eminence to be venerated because of his experimental "method." We have seen a similar treatment of the work of John Dewey. Any serious engagement with Freirian pedagogy cannot avoid its philosophical and political foundations, thus it is extremely dangerous to reduce his work to a variant of, say, the whole-language approach in reading. Freire's work cannot be appropriated or appreciated if it is abstracted by liberals from its sociopolitical and geopolitical roots.

Freire's distinct contribution to contemporary social thought deepens our understanding of how people can realize their potentiality—can become critically literate. This includes how they can serve their fellow human beings, acquire a share in the wealth of society, claim power to resist domination, and transform the present social order through a liberating praxis. For 2 decades Freire's work has helped teachers, social workers, literacy workers, theologians and others construct an educational vision in which self-development and social transformation go hand in hand in bringing ever-increasing democracy and social justice. Here in the First World, it has helped educators and other cultural workers understand and combat dominant trends in American society that are in the opposite direction.

Freire has devoted a lifetime to understanding how subordinate groups in totalitarian regimes and liberal democracies become depoliticized, deracinated, and recontained by dominant culture, and how their subversion is displaced by a countersubversiveness which, in the First World especially, is made subtle and menacing by the ideologies of media technology. It is my conviction that Freire's project can offer much to educators in the United States whose legacy of educational modernism has unified coercively the heterogeneous culture of the Other.

PAULO FREIRE: ENCOUNTERS AT THE MARGINS

Perhaps more than any other educator in this century, Freire has revealed that literacy practices are practices of power. As such, literacy may link hope to possibility by developing means of resisting the politics of oppression so that a qualitatively better world can be summoned, struggled for, and eventually grasped. Or, literacy may serve as a political restraint, uncoupling hope from possibility, restricting development of a world less terrorized by conflict between subordinate and superordinate groups. The former literacy refers to a critical assessment of the prevailing cultural hegemony in which the word is not read at the expense of the world, and the cultural spaces of everyday life are understood as being formed within asymmetrical relations of power and privilege. The latter literacy refers to that which is merely functional, harnessing ideology to social relations of domination, encouraging individuals to form values, politics, and a reading of the world in static images produced in the ''machine ecstasy'' of the dominant culture. It is to the former, liberatory literacy that Freire's work is directed.

All language, according to Freire, reproduces dominant forms of power relationships, but it also carries with it the resources for articulating a liberating vision of the future. Freire makes it clear that an important correlation exists between advancing and deepening the socialist project and the capacity of the discourses to which we have access to encourage self-reflexivity about the literalness of our realities and those of our fellow human beings; we need to understand historical contexts, social practices, cultural forms, and ideologies which give these discourses shape in order to transform them in the interests of democratic mechanisms for the realization of social justice. Freire teaches that contradictions in the larger social order have parallels in individual experience and that educators for liberation must restore the political relation between pedagogy and the language of everyday life. Since all pedagogical practices are constituted within regimes of truth and ruling social arrangements, the important questions for educators become: what pedagogical forms permit emancipation of human potentialities, and what institutional structures should be in place for such capacities to develop politically unimpeded in the classroom and larger society? (See Simon, 1987).

For many illiterate peasants Freirian critical reflection takes the form of generative words and themes: slum, development, water, infant mortality. Although in the First World the themes are more discursively abstract and obfuscating, they nonetheless involve examination of society's deep structures, and how these structures help to inform the subjectivities of students in ways that constrain human capacities. Words are intimately connected to social relations and cultural power: they recapitulate the ideology and materiality of human existence.

Refusing to fall prey to modernist illusions of self as self-cohering, self-explaining, and monocentric, Freire assumes the position that the self is constituted dialectically within language and social action and is capable of exercising a critical consciousness. Consequently we can assume the position of ''contrary antagonists'' to the educational system and its role as a cultural medium of acceptance, passivity, and reconciliation. Freire believes individuals are capable of forming a praxis of liberation. Liberating praxes acknowledge that, though knowledge may be situated, constructed, and temporal, it can establish conditions for emancipation. A liberating praxis is not the creation of reason alone, but is based on a reasoning process undertaken as action in and on the world. Freirian pedagogy makes it clear that theory and practice work in concert, are mutually informing, and unite in the dialectical and political act of knowing. As Freire (forthcoming) notes, "there is a 'politicity' of education in the same way there is an 'educability' of the political; that is to say there is a political nature to education just as there is a pedagogical nature to the political act." Freire (1972) writes that "consciousness of and action upon reality are therefore inseparable constituents of the transforming act by which people become beings of relation" (p. 53).

Reality, for Freire, is not fixed, static, or ironclad. It is fundamentally dynamic, in flux, and continually changing, a perspective which Matthews (1981) refers to as Freire's "process ontology" (p. 91).

KNOWLEDGE, TEXT, AND CONTEXT

Freire could be charged with positing reality as relational, but this is hardly the same as labeling him a relativist. Freire does not consider all ideas to be of equal merit, but argues they must be understood contextually as historically and culturally informed discourses subject to mediation of forces of material and symbolic production, part of what Giroux (1987) calls the "relational nature of how meaning is produced, i.e., the intersection of subjectivities, objects, and social practices within specific relations of power" (p. 11). In this sense, Freire considers knowledge always to occupy the tension between the *specific* and the *universal*. Freire's position on knowledge is clearly post-Cartesian: We cannot hide the word's inherence in, its constitutiveness of, and its ingress to the world. This is a position that, rather than vitalizing the objectivity of knowledge, underscores its insinuation into human interest and social power.

Freire's dialogical pedagogy stands in resolute opposition to problem-solving education (frequently going under the name of "critical thinking") and what he calls "banking education." According to Freire, educators using problem-solving approaches in classrooms "distort the totality of human experience, reducing it only to those dimensions which are amenable to treatment" (Connolly, 1981, p. 73). Similarly, banking education distorts the emancipatory possibilities of pedagogy by reducing the act of knowing to transmitting, memorizing, and repeating factual information. Freire posits the concept of dialogue—combining thematic investigation and problem-posing education—against this form of domestication of the mind, a process carrying its own epistemological cycle, as described by Connolly (1981):

> Freire insists that the teacher is not merely the one who teaches, but is also the one who is taught in dialogue with students. The students in this complementary dialectical relationship, while being taught, also teach the teacher. Teacher and students cooperate in an activity in which all of them grow. Authoritarianism has no place in a dialogical situation. As the teacher dialogues with students their attention must be drawn to matters that are unclear. The approach must always be problematic, asking, Why?, How?, Is this true? What is the relation between what you have just said and what the person before you said? Do you think there is any difference between these two statements? Why? (pp. 74–75)

The act of knowing, in this instance, is action-reflexive; it is an active transformation of and through the world, not an accommodation to it. Dialogical knowing renders problematic an individual's or group's existential predicament in relation to a larger sociopolitical context. Whereas it is true Freire's work is concerned with self-transformation, it is equally true that it is concerned with social transformation, assuming as a central referent the reconstruction of structural arrangements of the existing social order. Given these dual foci, it is easy to see why, for Freire, critical reflection cannot occur in antiseptic isolation from the world of others. Critical reflection is a social act of knowing undertaken in a public arena as a form of social and collective empowerment. To reflect critically in isolation merely validates personal transformation or empowerment at the expense of collectively making history *with and for* others. Personal history is embedded in social forms which are part of our collective cultural present, and these owe an ideological debt—whether good or bad—to the past.

Critical reflection is a *revolutionary practice*. It is the task of educating students, but also of educating educators. Critical reflection, or critical consciousness, as formulated by Freire, is a rejection of false, naive, or magical consciousness—an adherence to forms of oppression—and constitutes philosophically what Matthews (1981) describes as historical, critical, fallibilist, and processual. The term "fallible" (p. 91) stresses that knowledge is never complete and can always be improved upon. Freire's concept of knowledge also underscores Foucault's (1980) conviction that truth is what constrains our forms of understanding.

Critical or dialogical reflection is a part of a political and historical process, a battle waged on behalf of the immiserated subordinate classes who seek freedom from the cultural and moral hegemony of the dominant culture. Freedom in a Freirian sense means unmasking cultural mechanisms of power as a basis for engagement in emancipatory action. Freire recognizes that sociocultural power is a double-edged sword that can sever bonds of domination, yet can also be wielded by oppressors. Even when sheathed, such power can be dangerous, since it can conceal its own means of operation.

Shor (Shor & Freire, 1987) asserts that radical teachers in the U.S.:

> are usually impatient because of our commercial and individualist culture, quick fixes, dynamic changes, fast cures, practical methods, manageable remedies. The problems of society will not be solved soon or in a single classroom. But, there is a nobility to this impatience because it drives us forward towards answers, so it is not only a trap that can lead to fake solutions or to cynicism in the absence of easy answers. (pp. 32–33)

Freire is in basic agreement with Shor, linking problems in American education to the separation or dichotomy between reading and the world we live in.

Important to Freire's conception of literacy is acknowledgment of the means by which marginalized groups refuse to be absorbed into the hegemonic articulations of the dominant culture to become docile bodies split off from empowering processes. In this case, literacy is a process of colonization, and illiteracy becomes a resistant act of refusing. Despite the banal attacks on the concept of resistance by writers such as Gronn (1988), the term is decidedly important, as Giroux (1987) remarks: "such resistance should be seen as an opportunity to investigate the political and cultural conditions that warrant such resistance, not as unqualified acts of conscious refusal" (p. 13). Critical dialogue is what Shor (Shor & Freire, 1987, p. 104) would describe as "situated pedagogy." It is a process of collaborative discourse in which reflection combines with committed action to dismantle hegemonic structures supporting oppression. In this way, students take their places as actors in the drama of transformation of the self-as-social and the social-as-self. Self-transformation cannot occur unless individuals understand and work against their personal implication in the process of social repression.

However, Freire views revolution as more than achieving full human potential through dialogues constructing a new social semiotic; it necessarily involves structural change in the larger social order. For Freire, this change must be actualized by affecting *the pedagogical dimension of political praxis* which must transform larger economies of power and privilege, and the economic, social, and political agendas of groups dominating domestic society and the state. This can be achieved both within the field of signifying practices (i.e., by undermining the discourses of patriarchy, the unity of the Cartesian order, and liberal humanism's conjunction with positivistic science) and through direct political challenges to oppressive public policies and institutions. But there exists relationships among social semiotic coding, patterns of identification, and systems of privilege such that people are differentially positioned in the world of material structure and institutional life. Such positioning is contingent on conditions surrounding discursive practices and struggles involving the social class, race, and gender of historical agents. Identities are the medium and the outcome of discursive, institutional, and social arrangements in which meanings are not fixed, however disciplined their interpretations. Freire is aware of this process, though he does not directly express it in these terms. The generic distinction we have drawn between Freire's critical literacy and conventional approaches to cultural and functional literacy is the former's potential for social critique, and the latter's deep-seated inability to recognize the rhetorical nature of knowledge, literacy's own status as discourse, and literacy as a servant of power.

Freire's work illuminates the essential praxis necessary for establishing a critical literacy in our classrooms and for actively contesting the power arrangements that structure our politics of everyday life. Language is understood by Freire as something that does not give us transparent access to reality, but serves as a medium for constructing rather than discovering meaning. For Freire, language does not simply incarnate reality without implicating itself in relations of power. It usually does so as a totalizing system situated in the dominant strain of modern Western thought in which interpretive strategies are employed to categorize and classify the way "we" understand the social and cultural practices of "they." In other words, language is more than an arbitrary system of differences in which meaning is guaranteed by the linguistic system itself and by the values given to signifying practices within particular linguistic communities. There is no Rosetta Stone—no privileged access to meaning in the sense of discovering a master code that explains how elements of a social text function together (which is *not* to claim that there exists no access to extra-textual reality, or that reality is an endless deferral or deformation of meaning or an abysmal plummet into infinite regression). Rather than granting codes a transcendental status in which they serve as privileged referents around which other meanings are positioned, Freire puts much more emphasis on meaning as a contested event, a terrain of struggle in which individuals take up conflicting subject positions in relation to signifying practices.

Extending Freire's analysis, we could argue that meaning is material in that it is lived within and through the materiality of discourse, that is within and through bodies. Inscription through the flesh, what I call "enfleshment"[2] (in the sense that metaphor is a correlate of patterns of bodily action and interaction; see Jackson, 1983), is the seat of discursive power—the founding act of culture. Freire foregrounds the fact that we can only know the real through regimes of signs, through systems of representation. Meaning consists of more than signs operating in a context, but rather includes a political struggle over signifying practices. Historical agency is not something that just happens; it can be made more self- and socially critical by challenging everyday language and social practices giving shape to our world. I am using the term "historical agency" here because Freire's ideas are forged within an interactive nexus of philosophical *topoi* such as exile, oppression, struggle, history, and identity in which the struggle to release the oppressed from their historical bondage is the primary leitmotif (and a very elegiac one). Historical agency is an ongoing process involving a plurality of literacies that develop alternative positions within a critical language so the many-sided self has choice about the direction in which to desire and to dream.

Dialogue emerges from Freire's pedagogy as a practical option for teachers and students for replacing the authoritarian mentor approach. In contrast to functional or cultural literacy's claims for the self-containment and palpable presence of knowledge, Freire's approach emphasizes dependency of knowledge on existing, highly conventionalized meanings. As one reads Freire's writings, the act of knowing is invariably made critical, reflexive, and necessarily incomplete precisely as it works to uncover the interests that inform such conventionalized meanings. It is in its incompleteness and provisionality that emancipatory knowledge derives its dialectical strength. Emancipatory knowledge is never realized fully, but it is continually struggled for, just as words making up our frames of intelligibility are a result of discursive struggle within the domain of the sign (see Volosinov, 1973). Because implicitly Freire recognizes that discourses are pragmatically negotiated through *difference*, it is antithetical to his own works to establish *a priori* universal principles with which to objectively shape pedagogical practice.

THE NORTH AMERICAN CONTEXT: AN ELABORATION OF TWO FREIRIAN THEMES

In what follows, I will elaborate on two themes of Freire's work: historical remembrance and the politics of experience.

The Flesh of Memory and Redemptive Remembrance

Freire stresses the importance of stories students bring to classrooms based on their own experiences, for these form the "warrants" that can guide their liberating praxis. Students' stories often reflect the ethos and spirit of the community and the structured silences making up its repressed unconscious. Narratives provide the discursive vehicles for transforming the burden of knowing into the revolutionary act of telling. Making an experience into a story is perhaps the most fundamental act of human understanding. It is the narrative that gives memory shape and meaning.

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[2] Enfleshment refers to the mutually constitutive (enfolding) of social structure and desire; that is, it constitutes the dialectical relationship between the material organization of interiority and the cultural forms and modes of materiality we inhabit subjectively. Enfleshment is the "quilting point" that results when the radical externality of the body/subject as independent and resistant to our volition joins the pure interiority of our own subjectivity. Enfleshment, then, involves both the entextualization of desire and the embodiment of textual forms (see McLaren, forthcoming).

To remember *in a critical mode* means, in Freirian terms, to confront the social amnesia of generations in flight from their own collective histories—the subjugated knowledges of the marginalized, excluded, and disenfranchised. This process was described by Foucault as a form of "counter-memory" and by Welch (1985) as "dangerous memory." Critical remembrance establishes ethical referents for social change. We can become part of the process of giving voice to the subjugated knowledges of oppressed people by allowing the oppressed to speak for themselves. In this way subjugated knowledge provides new forms of critique, solidarity, and struggle, but also a deeper identification with the victimized. This is what Giroux (1987) means when he refers to Freirian literacy as "liberating remembrance."

Adamson (1985) has developed an illuminating distinction among what he calls modes of "memorizing," "memory," and "remembering." Whereas memorizing tries to recall what was, and memory dreams of discovering the master code—the Rosetta Stone—with which to uncover the correct interpretation of the past, remembering is a critical and redemptive mode which attempts not to understand the past better, but to understand it *differently*. Remembering conceives of history not as a constraint on the present, but rather as a "source or precondition of power" that can illuminate our political project of emancipation. History, therefore, becomes a source of imaginative power as remembering invites us to remember in different ways so as to comprehend our social and political situatedness; remembering bears an affinity to Benjamin's concept of "redemptive history" (Eagleton, 1981). This is far removed from the simplistic notion of "those who fail to remember the past or ignore history are condemned to repeat it" and is closer to Freire's notion of *conscientizaçao*.

Consciousness is constantly seeking to escape remembering, preserving itself from being overstimulated by remembering, rather than preserving its integral relation with past experience. In the present era remembering must take the form of a radical disruption—a blasting—that is strong enough to break through unconscious repression. Remembering must mediate between the sense impressions and thought. Rather than freeze-frame events for a disinterested inspection, it must dislodge and summon forth hope. Especially in the present "idealist culture of memory," it is important to develop a critical/historical perspective that is able to "arouse dormant emancipatory energies" (Arendt, 1956). Redemptive remembering recognizes that subjectivities are forged in asymmetrical relations of power, and historical subjects are created nonsynchronously within hierarchies of discourses, cultural forms, and social practices according to race, class, and gender location in the larger social order. For instance, a working-class black female's subjectivity is shaped from discourses, social practices, and cultural memories qualitatively different from those of a white, middle-class male. At times gender will assume a greater place in our project of resisting oppression; at other times, race and social class will figure more prominently.

The critical theory to which Freire's work speaks must be extended to allow women as well as minorities to emerge as actors on the stage of human struggle.

Furthermore, conceptual frameworks purporting to transform the constructions of subjectivity should be purged of phallocentrism, Eurocentrism, and masculinist ideologies. A major task for Freirian pedagogy is to rewrite the master narratives of liberal postindustrial democracy and the humanist, individualist, and patriarchal discourses underwriting it, while at the same time interrogating and reconstructing the idealized conception of the subject which has been shaped by Eurocentric and androcentric discursive power relations.

Redemptive remembering creates an arch of social dreaming, that is, a forum for sharing stories of pain, but also for constructing narratives of hope through the development of pedagogies capable of uniting those who have experienced racial, gender, and class subordination. To engage in redemptive remembering is to recall how justice has become underrepresented within dominative regimes of discourses and social practices through race, class, and gender discrimination. The purpose of such remembering is to free us from mystification resulting from living unreflectively under such discourses and material constraints. But redemptive remembering is a form of utopian dreaming. It demystifies the present by allowing us to recognize ourselves from a critical/historical perspective as, disproportionately, oppressors and oppressed, but also carries traces of future possibility in its reconstruction of the present. *It is in this sense that Paulo Freire's notion of critical reflection can be compared to a form of redemptive remembrance and social dreaming.*

A redemptive remembering must serve as a critique and a referent for hope. It must provide a way for the nonpoor to recognize their privilege in order to make alliances with the oppressed. Histories of oppression must be recounted, including unaddressed instances of domination using the form of institutional and social practices, universal claims to truth, as well as the forms of racism, sexism, and classism. Memories of hope must be offered that reclaim the revolutionary subject and the historical condition of resistance. These must include the voices of the oppressed and respect for their integrity and subjugated knowledges (Welch 1985).

Richard Kearney (1987) speaks of a form of "anticipatory memory" which "rediscovers in history many narrative prefigurations of possible truth, now repressed or forgotten" (p. 54). He also reminds us that the development of an ethical imagination in the age of postmodernism presupposes the existence of a narrative identity which "remembers its commitments to the other (both in its personal and collective history) and recalls that these commitments have *not yet* been fulfilled" (p. 55).

Within narrative identity, the self is constituted as the reader and writer of his or her life, but also as a narrator who constantly revises his or her own story in relation to historical and fictional aspects of cultural memory. In this way, personal memory is also communal memory, and personal identity is always communal identity. Personal history is also the history of a collective past and future, the relation of the self to other.

Redemptive remembrance is a form of counter-memory. Counter-memory employs stories and narratives as a mode of contestation. It provides a backdrop from which to judge the claims to truth of any one story. Counter-memory moves beyond history and myth, especially the historical narratives of Western capitalist countries, and, in fact, plays myths *against* history. Counter-memory is forged in the margins of popular collective consciousness which contains utopian dimensions. These serve as a critique and popular vision of what could and should be. The concept of countermemory (see also Giroux, 1990) should constitute part of the language of public life, a vision of optimism, and a witness to history; it should provide the ethical and epistemological grounds for a politics of difference within solidarity. The postmodern mode of redemptive remembrance recognizes the fallibility of truth and that a totality in which all differences are recognized cannot exist. This recognition is not cause for despair, but the beginning of a radical hope rejecting the quest for certainty and the craving for absolutes. It is a hope that is open to difference and otherness and demands that one is responsive to the other's claims. It is a hope that is fundamentally Freirian.

Language and Experience

There is an area that is a particularly troublesome problem in the work of Freirian-influenced teachers, especially in the United States. I now turn from the topic of memory to the relationship between language and experience. Sometimes there are difficulties with pedagogical approaches which, like Freire's, are gounded in the concept of student experience. Whereas memories call for interpretation, direct experience is frequently thought to speak for itself. It is not uncommon to confront a self-styled Deweyan or Freirian educator who insists on privileging experience over theory. However, as Giroux (1985) points out, Freire (and Dewey for that matter) neither romanticizes experience nor fails to render experience problematic.

Simon and Dippo (1986) highlight an ongoing concern in critical pedagogy, arguing that educators must avoid the conservatism of confirming that which people already know. By this they mean that experience should never be celebrated uncritically; we must encourage student voices while simultaneously encouraging the interrogation of such voices. Experience does not speak for itself, but is a way in which individuals confront the contingency of the present and the politics of daily living. Though one does not deny the importance of nondiscursive experience, experience is an understanding constructed largely linguistically as an interpretation over time of a specific concrete engagement with the world of symbols, social practices, and cultural forms. No experience is pristine and unmediated. How we think and talk about our world through the languages and theories made available to us largely shapes our understanding of why things are the way they are, which images of "that which is not yet" are possible, and what needs to be done for things to be otherwise.

The language of teaching often serves as a coercive text by restricting the way in which teachers and students make sense of experience. Teachers, especially, need to recognize how their histories, ideological assumptions, and Eurocentric narratives are grounded in discursive economics of liberal capitalism and shape their ability to make sense of the world of their students. Student interpretations of their own reality must be accorded a preference in pedagogical discourses but should not always be taken at face value. If experience is largely understood through language, and language shapes how we see and act *with and on the world*, then it follows that experience itself does not guarantee truth since it is always open to conflicting and contradictory interpretations.

Since language enables us to interpret experience, then it follows that language is constitutive of subjectivity, that is, of an individual's conscious and unconscious understandings. The serious issue here deals with *ways in which we have been inserted into language as teachers and students*. To reflectively situate ourselves in discourse is to historicize our role as social agents. *If we conjure only those ideas we already have words to express, then our presence in history remains comfortably static*. Part of this crisis is in the unavailability of subject positions in which students are permitted to practice radical critique and to engage in social practices committed to establishing a more democratic social order. Shotter (1989) follows Wittgenstein, Mills, and Bakhtin (especially the latter's notion of "addressivity") in asserting that "the main function of language is not the representation of things in the world, or the giving of the 'outer' expression to already well-formed 'inner' thoughts, but its use in creating and sustaining social orders" (p. 141). The point is, only certain languages (vocabularies, narratives, concepts) are deemed legitimate in communities of discourses used by educators. Often those languages are ones of management, technical efficiency, and over-simplified communication, and often such vocabularies of convenience mask power relations which more critical languages can convey. This does not mean critical educators should not make their views comprehensible, but it does mean they should increase demands on students to acquire a critical vernacular so their understanding of experiences can be deepened and empowered. And, we should explore with more exigence how meanings and hegemonic articulations are manufactured outside of purely discursive modes and actions of social agents (McLaren, 1989).

The important point is that experience should be recognized as a form of cultural politics *always historical and gendered*. A pedagogy of liberation that does not attend to the specificity of experience but attempts to universalize experience is doomed to further entrap women and minorities. This implies theoretical discourses not based on subordination of the female by the male, reason's subordination of nature, and marginalization of the other by the narratives of the self that shape desire and agency.

Within progressive educational approaches in the United States, the privileging of experience over theory has led to a celebration of empirical realism and an undermining of a critical theoretical approach. This has led to reforms supporting the present relationship of production and class organizations.

Fuss (1989) also makes the point that "The anti-essentialist displacement of experience must not be used as a convenient means of silencing students, no matter how shaky experience has proven to be as a basis of epistemology" (p. 117). But it is important not just to engage and problematize the language of experience (how knowledge gets constructed on the basis of race, class, gender, and sexual preference) but also, as hooks (1989) notes, to make critical the passion of experience and the deep memories that constitute it. That is, how can one link a politics of experience to politics of knowledge? (see Giroux, 1988; Giroux & McLaren, 1989; hooks, 1989).

Today feminists are often faced with the dilemma of either adhering to essentialist doctrines or fostering the dissolution of feminist struggles representing interests of particular women. The way out of this dilemma, argues Elizabeth Grosz (1989), is in recognizing that feminists need not take on universalist and essentialist assumptions in the same way as patriarchs. I would add to this insight bell hooks' (1991) observation that marginalized groups should not be the only ones singled out for exclusionary practices attributed to essentialism; after all, dominant groups employ essentialist strategies that produce exclusionary behavior firmly buttressed by institutionalized structures of domination that do not criticize or check it. And although it is important to oppose essentialist practices that construct identities in exclusionary, monolithic ways, it is important not to relinquish the power of naming one's experience in ways that can help formulate theories of experience. The complexity of experience—for instance, knowledge of suffering that is often inscribed in the bodies of marginalized peoples—needs to be engaged through what hooks calls "multiple locations."

What helps Freire's later writings escape the charge of essentialism is its prophetic and utopian character. He is skeptical of grand theories, but at the same time he does not give up the idea of a global vision for the appeal of local struggles. In his recognition that domination is external and internal to the subject, and of the need for the oppressed to escape from the sadomachoistic relationship between the oppressor and the oppressed, Freire implicitly suggests the need to grasp this antagonism in its most radical dimension. To break the bonds of self-hindrance is one goal of Freirian pedagogy, as is changing material and structural conditions of social life in the struggle for liberation. Not surprisingly, liberal educators often launder the political import of psychological liberation in Freire's work to refer to individual forms of distress; they lose sight of his concern with the pathogenic reality that produces forms of shared victimization in sociohistorical contexts.

Freire recognizes that critical language must not serve as a language of imposition, as a vocabulary of indoctrination that positions individuals in such a way that they are made to see the world and where they stand in it from the perspective of the critical theorist. We may find problematic the sexism of Freire's language and his phallocentric paradigm of liberation in which freedom and the experience of patriarchal manhood are conflated; however, this criticism of Freire's "blind spot" should not overshadow his valuable insights (hooks, forthcoming).

Following Freire's lead, it becomes the task of critical pedagogy to provide students the discursive and conceptual means to understand ideological dimensions of their experiences, deep memories, psychological blockages, and passionate investments in everyday life and relate these to material and symbolic structures of power operating *in the larger contexts of social life*. In some analyses of Freire's work, we are left with the impression that students' experiences should be accorded a privileged status with little consideration for the language used to mediate among their own reality, the situatedness of their community, and their ideological location within the larger social order. This privileging of raw, uncritical knowledge works against the premises of Freirian pedagogies and other critical approaches to schooling.

This does not mean the choice of language and theoretical constructs used to analyze experience should not be open to debate; it is important that the language of theory educators endorse is able to move outside constraints of Name-of-the-Father vocabularies and, further, is able to serve as a medium for making heard the voices of people of color. It is also undeniable that critical reflection requires a language highlighting the transparency of everyday discourse and calling subjectivity into question. Theoretical language must resymbolize ordinary life to bring into relief its supposedly inevitable imprisonment in existing relations of power and to locate transformative "openings." This has never been more urgent than in this era of late capitalism or what has been termed the postmodern condition.

The important issue is that experience and language are intertwined. One cannot give primacy to experience without taking into account how experience is structured through language, whether this language refers to a tabloid editorial, contemporary street argot, or a treatise on popular culture by critical theorists. In a similar fashion, one cannot privilege language because ideology is not only lived through language, but also through experience, that is, through nondiscursive, textual and extratextual forms of knowing. The issue for development of critical knowledge is affirming the experiences of students so their voices are acknowledged as part of the dialogue; but one must not take such experience at face value, as if it speaks romantically or tragically for itself. The task of the critical educator is to empower students with a language that invites them to understand themselves as active subjects in history and provides them with a means of forging a liberating vision of their human capacities and of how they can contribute to the transformation of social relations of oppression.

Freire's treatment of language is geared to locating sources of lack of freedom in the reproduction of race, class, and gender relations. Although Freire's theories are not formally situated in structuralism and poststructuralism, they support certain advances within these perspectives. Freire's work acknowledges the relation among language, social structure, and consciousness, maintaining that knowledge and meaning are always *produced* rather than expressed or discovered. This perspective also implies a critique of poststructuralism when he recognizes the oppressed are more than subjects constituted discursively, but rather are subjectively produced by the material effects of economic, social, and psychological conditions (Aronowitz, forthcoming). Whereas structuralists view language as a system of signs and meaning as the product of a system, poststructuralists are more interested in the arbitrary connection of the signifier (word/letter/sound) and the signified (meaning/idea/concept), arguing that language, as an aspect of identity production, has no intrinsic meaning but is better understood with a view to instability, innovation, and unpredictability. More emphasis is placed on the way language is "taken up" by individuals and *made to mean*, because meaning is understood as a function of *difference* and relationship within a system.

Freire also recognizes interrelationships between the culture of language and the language of culture. Language and culture are products of each other. Culture is transmitted through language, helping us form images of engagement with reality. Language forms our capacity as social agents to speak. But language as culture is always a particular language because we do not live in a homogeneous culture, but inhabit a universe of heterogeneous ones. The question colonized peoples must raise is: Do we have a language that distorts or clarifies the reality of our struggle?

It is important that discourses of liberation reflect not only a European or masculinist view of history, that they are built not only on an Anglo-European scholarly axis. Critical theory, in the United States in particular, must lose its specific character by incorporating discourses of non-Western liberation struggles and, where possible, *connect them to its own revolutionary traditions*.

What does this discussion mean for teachers? Giroux (1988) reminds us that student experience must be understood as part of a web of power relations in which some groups are often privileged over others. It is important for teachers to critically examine cultural backgrounds and social formations from which students produce their vocabularies for interpreting rituals of daily living. Teachers are not merely dealing with students whose interests are isolated and unique; they are dealing with individuals whose stories, memories, narratives, and reading of the world are related to wider social, cultural, and institutional formations and categories.

Narratives are culturally contingent and bear traces of historically and culturally available meanings. The issue, notes Giroux (1988), is not merely one of relevance, but one of power. *Schools not only teach subjects but also shape subjectivities and structure collective futures*, and in doing so often function to disempower students by tracking them into classes where there are lowered expectations, or by refusing to provide them with relevant knowledge that speaks to the context of their lives. Giroux reminds us that many educators view different languages and backgrounds as deficits to be corrected, rather than as strengths to build on. He cites the example of minority, working class children who are vastly overrepresented in special education classes and who make up a large share of the dropout statistics. He argues that a critical approach to pedagogy gains an emancipatory dimension when incorporating a theoretical understanding of how experience is named, produced, and rewarded in schools. Teachers need a critical vernacular to understand how school knowledge and classroom social relations are constructed, disseminated, and legitimated in instruction and how underlying interests embodied in them (including those of Eurocentric and patriarchal narratives of mainstream liberal pedagogies) function in enabling or disabling ways. Freire's understanding of knowledge as a creature of cultural limits and theoretical borders can assist educators to understand how certain literacies are necessarily implicated in "selective" economics of truth, value, and power. Knowledge is indexical to the context of the knower and the known. Knowledge is implicated in relations of power, and power is distributed laterally and historically, which is to say unequally, among groups differentiated by race/ethnicity, gender, and class. If we believe the human mind is quintessentially creative and that schools should enhance, deepen, and develop creativity for its own sake, then we are privileging the "creative experience." If schools provide opportunities to acquire knowledge in the five main modes of artistic understanding, the aural, visual, verbal, kinesthetic, and enactive, these forms of knowledge production are never innocent in themselves. The production of knowledge occupies specifiable locations in relations of power. Knowledge must be linked to evaluative choices. Such choices should be seen as social practices, historically and socially constructed, and educators should distinguish cultural choices as liberating or oppressive.

CONCLUSION

> Art is not a mirror held up to reality but a hammer with which to shape it.
>
> —Bertolt Brecht

Freire's revolutionary project is summed up in his own words: "There is no revolution without love, the revolution is loving" (forthcoming). The work of Paulo Freire is a compassionate fire, one in which the bourgeois world of mystification melts away as our critical imagination becomes ignited; it is a fire heating up our spirit even as it softens the solidity of existing social relations; it is a fire whose flames of transformation invite us to take Brecht's hammer and to forge on liberation's anvil new, reciprocal discourses of knowing, and freer, more equitable spaces for living.

Yet the metaphor of the anvil, though capturing the force of Freire's political project, does not do justice to the complexity of his ideas. To do so, one would have to examine the warp and woof of Freire's sociological imagination. The former metaphor testifies to the power Freire's pedagogy gains from its social location in the experiences of the oppressed; the latter captures the compassionate weave of his politics spun in a language speaking to the heart of all those who suffer.

For Freire, the most important sites for resisting enslavement are the schools. Though not the only sites for social transformation, they are very necessary. That they are not sufficient for social change should inspire educators to commit themselves to alliances with social movements interested in class, gender, racial, and other struggles for justice that can help realize the most radical dream of democracy, the dream of freedom. As Arendt (1956) has pointed out, "freedom" is different from "liberation." Liberation is a necessary precondition for freedom but is not sufficient to guarantee what people will do with that freedom. Freedom means deepening our democratic vision and collectively shaping the dynamics of social life. This requires an expansive ethics affirming the moral-political ideals and practice of social justice, as well as concreteness and sensuality of daily existence.

The incursion of First World capitalist exploitation into the Third World creates an ideological unconscious easily monitored by market managers of transnational corporations. This manufactured unconscious compels conventional thinking, induces conformity to the needs of the powerful, and keeps the rift between rich and poor seemingly natural and unbridgeable. Dependency on U.S. investment for development has made Brazil a victim of its own progress. For those who refuse to succumb to its global machinery of corporate power, the U.S. uses destabilization tactics (such as embargoes), clandestine interference and political manipulation by the CIA—what Dussel (1980, p. 51) calls "a lawfully armed extension of the transnational corporations," or as in the recent case of Panama, military invasion. For all global citizens, the stakes are getting higher. And for the urban homeless the streets have become, not the setting for a spectacle of consumer decadence and acquisition, as is the case for those more economically fortunate, but their own living rooms, their bedrooms, their bathrooms, and their kitchens.

One country is faced with a production-oriented economy in a state of dependency, the other with a service economy in which democracy is detached from the struggle for social justice. Freirian-based pedagogies in both nations offer important challenges to those for whom capitalism has become an invitation to self-loathing.

Debates highlighted here are those to which Freire's work has a direct bearing with respect to the downtrodden, the humiliated, the casualties of social systems and economic institutions. Among differing social, political, and geographical contexts, Freire's work offers a common ground for contextualizing oppression and transforming effects of self-defeating patterns of alienation. It provides a direct challenge to the function of pedagogy as it is currently understood and practiced. It bridges the despair caused by the gap between political actualities and utopian possibilities.

What makes Freire's work important for social and pedagogical struggle at this historical juncture is that it constitutes an *ethics of obligation*—an ethics going beyond liberal humanist concerns with self-esteem so prevalent in the mainstream pedagogical discourses of capitalist countries. As Ricoeur (1989) has pointed out, self-esteem might imply only a single individual, whereas respect is "directly structured as a dialogical category in the same way that interaction implie[s] conflict; there is no self-respect without respect for the other" (p. 100). In the final analysis, Freire offers not pedagogical rules for individuals to apply to particular social acts, but a pedagogical attitude situated on the level of an ethical intention, based on respect, a moral obligation, a principle for living informed by a narrative imagination telling us the story of exile, humanity, historical responsibility, and liberation.

Freire's work offers us a common ground for contextualizing oppression and for transforming the effects of conditioned fear and self-defeating patterns of alienation. It provides a direct challenge to the categorical function of pedagogy as it is currently understood and practiced. It manages to bridge the relentless and incorrigible despair that exists between current political actualities and utopian possibilities.

Freire's challenge has been to bend reality to the requirements of a just world and to create new spaces for critical activity in the home, the school, the community, and in larger public and administrative contexts. His task has been to decenter and disorient forms of authority that domesticate the Other, that lay siege to the power of the margins. His goal has been to question the tacit assumptions and unarticulated presuppositions—the unexamined faith in continuity and desire for familiarity—that make up the history of the oppressed and to put under stress the norms these assumptions legitimate, the self-images they create, and the despair they foster. His contribution has been to breathe new life into historical agency in a world that has witnessed the apocalyptic disappearance of the subject of history.

Freire's pedagogy is one that reveals social consensus to be social difference dressed up in discourses of equality that hide the real face of domination. But his interrogation of the limits of these discourses does not transcend the culture in which they are embedded in the form of a dogmatic system of thought or totalizing critique. Freire does not need to take shelter in a transcendental citadel that stands above the messy terrain of concrete struggle, lived history, and the contradiction, complexity, and paradox of enunciation in contemporary social life.

The political pedagogy of Paulo Freire, if protected from reductionist practices of liberal educators to turn it into a method, can serve as a praxis where Blacks and Latinos no longer fear and obey the white gaze of power, where bonds of sentiment and obligation can be formed among all oppressed people, where resistance can enable schools to become more than instruments of social replication, where contrasting cultural styles and cultural capital among groups (différences de moeurs) cease to remain tokens of estrangement that separate groups, but rather the very impetus that brings them together as liminal travellers under an arch of social dreaming.

Freire's words blow like strong winds through the torpor of Western liberalism and the political quietude and apathy of generations of today's youth—generations increasingly held captive by the power of global capitalism and the structures of intelligibility and social relations such power is likely to produce. They whisper with the force of a gale, calling educators to develop pedagogies that establish not only the grounds for a critical language of imagination, but also the formation of a teachable

heart—a heart that invites compassion, empathy, and forgiveness through a new and revolutionary way of loving.

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THE INTERTEXTUAL LINKS OF READERS USING MULTIPLE PASSAGES: A POSTMODERN/ SEMIOTIC/COGNITIVE VIEW OF MEANING MAKING

Douglas K. Hartman
University of Pittsburgh

This study is about the intertextual links generated by readers as they confronted a five-passage tableau. The origin of their story can be traced to three sources. The first is to reading assessment, where there is a small but growing interest in assessing readers' understandings of multiple passages. This notion of "intertextual" assessment stands in sharp contrast to the conventional reading tests which largely measure comprehension of *individual* passages. The paradigm for these traditional reading measures posits that comprehension is the act of understanding *single* passages. Second, reading lessons center around the comprehension of *single* passages, instructional strategies focus on the comprehension of *individual* passages, post-reading discussions evolve around a *single* passage, and reading research instruments measure comprehension of *solitary* passages. The single passage paradigm is deeply imbedded in our way of thinking about reading instruction and research. Finally, in thinking about my own reading and what others have told me about their thoughts while reading, it seems that much of what good readers do while reading is connect and relate ideas to their previous reading experiences over time. The net effect of these connected and accumulated readings is that the reader's understanding transcends that of any single passage. These three initiating events demonstrate that traditional reading assessment, instruction, and research treat reading as a single, isolated instance; whereas in life reading is an open, ongoing series of connections and updates.

Recognizing what is an unnecessarily confining conception of comprehension, I set out to understand and explain what readers do when they encounter multiple passages. Three scholarly paths provided the theoretical breadth necessary to explain the ill-structured nature of this kind of meaning making: *literary criticism (postmodernism, deconstruction, intertextuality, reader response), semiotics*, and *cognitive psychology*. Scholars from these three traditions have viewed reading in *intertextuality* (where readers transpose texts into other texts, absorb one text into another, and build a mosaic of intersecting texts), *signification* (where readers formulate signifieds as they encounter the signs of texts), and *knowledge assembly* (where readers mobilize and assemble potential knowledge fragments into situation specific configurations of texts) (a more detailed discussion of these three paths is found in Hartman, 1991). Although these traditions have very different histories, vocabularies, and ways of thinking, at present they intersect in some rather remarkable ways. The first intersection deals with the *residence* of meaning. Historically, the "location" of meaning has evolved from an "in the text" stance to one of "outside the text," where meaning "outside the text" resides either in the reader, in the cultural systems in which the reader resides, or in the transaction of reading. Literary theory, semiotics, and cognitive psychology each represent a movement away from thinking in which the print on the page possesses an objective, knowable meaning that can be extracted. The second intersection is an emphasis on the *interconnectedness* of meaning(s). Each path makes use of metaphors—such as "linkage," "web," and "landscape"—suggesting that meaning is situated among and connected to other meanings, either in the reader, in the cultural systems of the reader, or in the transaction of reading. A final intersection reveals the *openness* of meaning. Each of the paths has moved beyond a closed or fixed conception of meaning to a point where meaning is open and indeterminate, contingent upon a number of elements, including context, culture, and social institutions.

By trafficking at the intersections of these scholarly traditions, a view of meaning making surfaced that was useful for understanding eight readers and situating their story. In particular, the *intertextual metaphor*, in which readers transpose texts into other texts, absorb one text into another, and build a mosaic of intersecting texts, proved to be a particularly seductive tool. Texts, as conceived in this study, are akin to signs (Harste, 1989; Kristeva, 1969, 1977/1980; Siegel, 1984). As such, they are not limited to linguistic signs (Beaugrande, 1980), but include art, music, drama, film, a gesture, an utterance, or a thought.

Adopting this intertextual view of reading, then, readers are conceived of as generators of interconnections or "links" betweeen texts, resulting in a web of meaning—an evolving mental web which Pearson and Tierney (1984) have called an "inner text." Following the lead of Spiro and his colleagues, who propose a *postmodern view of cognition* (e.g., Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987), meaning is packaged in units or "fragments" (Flax, 1990) in the mind and serve as the referencing system from which further meaning(s) can be constructed. When readers construct meaning, they assemble textual fragments by generating intertextual links between the fragments to fit a particular context. The reader's "databank" becomes a multidimensional heterarchical network of textual resources.

While assembling the "inner text" from past as well as evolving texts, readers also use their current experiences with text to revise their past texts and the connections among them. These revised past texts are in turn used to further revise the currently evolving "inner text." Hoesterey (1987) calls this "*the intertextual loop*": Readers use new insights from their current "inner text" to revise their conceptions of past texts and then loop these revised perceptions back to understanding the current text. This reciprocal, transactive process makes it possible for readers to generate new meanings that are constantly under revision and being continually reconstructed, *ad infinitum*. The "inner text" can be envisioned as a fibrous web of connections that are activated or strengthened between textual fragments in the mind. As a result, a single knowledge fragment (or text) can take on different meanings in different contexts. Put another way, the same text can be automatically reconfigured according to any number of possible organizational schemes to represent different "inner texts." Connections can also be deactivated or weakened between textual fragments. Thus, the act of reading multiple passages is the deconstruction *and* reconstruction of textual fragments.

It is against this backdrop that the story of eight readers unfolds. Their story highlights the on-line intertextual links of readers—similar to the ways in which Wineburg (1989) and Gevinson (1990) have examined the emerging understandings of historians reading primary sources and literary theorists reading literary texts. Two questions emerged as the eight readers read: (a) Does the intertextual metaphor hold promise for understanding what able readers do while comprehending both within and between multiple passages? and (b) What types of intertextual links do able readers generate while reading multiple passages? These questions guide the construction of their story.

METHOD

Students

Eight able readers (four male and four female, four juniors and four seniors) from a midwestern university high school participated in a series of case studies. One indicator of their ability was their standardized test scores: six of the eight students were ranked at or above the 92nd percentile on the Verbal section of the PSAT/NMSQT. The other students were ranked at the 85th and 66th percentile. The mean for the eight PSAT/NMSQT percentile rank scores was 91.4, with a standard deviation of 11.3. The students scored at the high end of other standardized tests as well (e.g., Cognitive Abilities Test, SAT, ACT, AP Exams). A further testament to the continued achievement of students who graduate from this high school is that three alumni have won Nobel Prizes (physics, medicine, and economics) and one has won the Pulitzer Prize.

Materials

The five passages read by the eight students were selected after a series of 26 pilot studies. The five passages: (a) represented an array of naturally occurring, full length materials that might be encountered by the students in school-related literacy tasks, and (b) presented topics, ideas, themes, issues, narratives, and so forth, on which the students were likely to have some prior knowledge. Additionally, the passages contributed to creating an *intertextually rich environment*. The potential for this environment can be seen in the following synopsis of the five-passage tableau:

> The first three passages (*An Episode of War*, Crane, 1979; *How Men Feel in Battle*, Byers, 1987; and *Johnny Rebs and Billy Yanks*, Wiley, 1968) are related in that they are about motives, fighting, and dying in the U.S. Civil War from the perspective of those directly involved in it, namely the soldiers and their immediate leaders. Passage 4 (*Old Man at the Bridge*, Hemingway, 1938) holds the idea of Civil War constant (along with the themes of motives, fighting, and dying), but shifts the setting to the Spanish Civil War and looks at the effects of war on those not directly fighting in it, namely the old man. Passage 5 (*The Discus Thrower*, Selzer, 1977) holds the idea of dying constant, but shifts the setting to a contemporary hospital where a man is dying, leaving uncertain why the old man is in the hospital and the cause of his

impending death. In general, the passages present a variety of perspectives and rhetorical styles from which readers have the opportunity to generate intertextual links.

Procedures

Each student read silently the five passages and reported aloud their thoughts while reading. The prompt I provided before they read the passages was:

> You will read a collection of five (5) passages. While reading, you are to focus on how the ideas, people, places, events, themes, etc., in the passages are related or connected to each other. Remember to think aloud while reading silently, keeping me informed as to the thoughts that come to your mind, and to mark in the text the place where that thought first comes to your mind. You may take as much time as you want to read the passages. There is no time limit.

To record where in a passage the students thought aloud, they were given a pen and instructed to make a red mark whenever they stopped reading and thought aloud. After having read the five passages each student responded to nine "prompting questions." These questions served as general prompts to gain insight into students' thoughts about the passages and the types of links they would generate retrospectively; they were not traditional comprehension questions that assessed the content of what was read. Following the prompting questions, I asked each student fourteen questions during a debriefing interview. The debriefing questions were designed to gather self-reported descriptive data and promote student reflections on what they had done while reading the passages and responding to the prompting questions. The 2½- to 3-hour sessions with each student were video taped and later transcribed for analysis.

Data Analysis

I began data analysis by reading the transcripts several times. My goal here was to identify units of analyses and to develop coding schemes that would reflect the types of intertextual links the eight students generated. After the initial readings: (a) I decided that an individual think-aloud episode would serve as the *primary* unit of analysis, with the responses to prompting and debriefing interview questions serving as *secondary* data sources, and (b) I sketched out a general scheme for coding links in the think-aloud episodes. A think-aloud episode comprises words spoken aloud by a student that were preceded and followed by some period of silence. An episode usually began when a student marked in the passage and thought aloud. It ended when he or she resumed silent reading. Each think-aloud episode was analyzed along seven dimensions, two of which formed the core of the analyses: *textual resource* (endogenous and exogenous) and *spatial/temporal proximity* (primary and secondary; local, regional, and global; recent and past).

For the primary data, two raters rated almost 900 think-aloud episodes for all eight students across all seven dimensions after several training/practice sessions. Interrater reliability was obtained from a random sample of 10% of the coded think-aloud episodes. Agreement ranged from 89.7% to 97.4% across the seven dimensions. For the secondary data, interjudge reliability was determined by having an independent judge view excerpts of the videotaped sessions and read the protocol transcripts.

The role of the judge was to confirm or disconfirm my perceptions, hypotheses, and interpretations.

The data were analyzed from several different perspectives to capture various facets of the readers' intertextual linking. Two of the analyses are presented here. The first examined the links of individual readers while reading Passage 3. The second looked at the ways in which readers linked themselves to the five-passage tableau.

RESULTS AND DISCUSSION

Readings of Passage 3

The first analysis looked at the intertextual linking of the eight readers while reading one passage, Passage 3: *Johnny Rebs and Billy Yanks*. Passage 3 was selected because: (a) the large number of links in the students' think-aloud protocols ($n = 226$) provided a large enough data set to identify local patterns, trends, and themes unique to one passage; (b) the passage came in the middle of the sequence, therefore, the students were well into the intertextually-rich task environment they had woven; (c) the comparison of soldiers in the North and South presented textbook-type reading, similar to high school history materials; and (d) the position of the passage in the sequence provided an interesting contrast to the two passages preceding it.

This analysis afforded a close look at the wide variety in students' referencing and maneuvering among textual resources. The concept of *textual resource* was particularly well suited for capturing the facility with which the readers referenced resources as they made their way through Passage 3. There were three "locations" for the textual resources students referenced: those within the passage they were currently reading (*primary endogenous*), those to passages they had read previously in the study (*secondary endogenous*), and to those outside the task environment (*exogenous*). The analysis of Passage 3 identified the stable linking profiles for individual readers.

A linking profile was developed for each reader's reading of Passage 3 by tracing the "location" of the textual resource in each of their think-aloud episodes. Their linking patterns were graphically represented along a vertical time line on which: a link to a *primary endogenous* text (i.e., traceable within Passage 3) was represented by an arrow looping out to the left and then back into the time line, a link to a *secondary endogenous* text (i.e., traceable to Passage 1 or 2) by a horizontal arrow out to the left of the line, and a link to an *exogenous* text (i.e., traceable outside the task environment) by an arrow pointing up and to the right at a 45° angle. These schematic representations were helpful in visualizing the type of reading each student gave Passage 3. Using these linking profiles and the students' think-aloud episode transcripts, three stable linking profiles for the readings of Passage 3 emerged—*intratextual*, *intertextual*, and *extratextual*. In this analysis I emphasized the linguistic dimension of "*text*." Thus, *secondary endogenous* links (i.e., those between passages) and when these links were made (beginning, middle, end, after) were the privileged criteria for distinguishing between the three linking profiles.

Intratextual. The first group of readers ($n = 3$) exhibited a way of linking that I called an *intra* textual reading of Passage 3. The typical pattern for an *intratextual* reading was for a reader to assemble an emerging understanding of Passage 3 (links to *primary endogenous* texts), while simultaneously situating these understandings in relation to personal experience or knowledge (links to *exogenous* texts) during reading, and then after reading to situate the passage in relation to the others in the study (links to *secondary endogenous* texts). It was as if these readers did not allow their ongoing understandings of Passage 3 to be "influenced" by the other passages—giving a closed reading—until after they had finished reading the passage. That is, they treated the passage as a discrete, autonomous object while reading, and only afterwards did they see or think of it in relation to the rest of the task environment.

Caroline provides a good example of an *intra* textual reading of Passage 3. To begin with, she generated a large number of links to *primary endogenous* texts ($n = 16$; the largest proportion, 74%, for any of the readers). Most of these links were *local* ($n = 10$), connecting texts between sentences. For example, in a paragraph presenting the combat performance of Northern and Southern soldiers, Caroline underlined "seriousness," "group consciousness," and "team spirit" in relation to Billy Yanks and linked back to previous sentences that characterized the Johnny Rebs:

> And here they say they [Billy Yanks] had more of a "group consciousness" and "team spirit," so it seems like they were sort of more organized than the South, instead of just wild attacking or whatever.

Periodically Caroline generated *regional* links, joining larger textual units. For example, in a paragraph on the second page which discussed why the Indians ended up as Northern or Southern soldiers, she underlined the names of several tribes and referred back to the first page when the author described why the Irish and other ethnic groups fought on one side or the other:

> Here when they mention Indians it seems like unlike the Irish or the other immigrants who just settled on which ever side they had lived in, here the Indians sort of seemed to split up by tribes.

The last three links of the passage were *global* links. It was as if she realized the end was near and took several opportunities to link large, across-passage textual units. For example, in the last paragraph of the passage she underlined "there was no discernable difference" and said:

> Okay, here at the end they go back to what they said in the beginning about how there is no big difference in the way they fought, and the reason why they fought . . . and what made them good soldiers.

While reading, Caroline situated Passage 3 in reference to her own personal knowledge, rather than to the previous passages in the task environment. In fact, all of her *exogenous* links were traceable to history class. It is interesting to note that she did not make any *exogenous* links until the middle of the passage. This indicates that situating her emerging understandings did not occur until Caroline was well into the passage. For example, on page two she underlined "Northern and Southern economy" and said:

> Okay, and then here when they mention the difference in Southern and Northern economy, that sort of reminds me of what we learned in history. We did a lot about contrasting the North and South.

After reading, Caroline linked to one *exogenous* and secondary *endogenous* text. These two links indicated she situated the passage post hoc. Her link to the *exogenous* text focused on stereotypes she saw in a TV miniseries, *North and South*. Then immediately following she compared the first three passages' perspectives on soldiers.

Intertextual. A second group of readers ($n = 4$) exhibited a linking profile that I called an *inter*textual reading of Passage 3. The typical pattern for an *intertextual* reading was for readers to begin by situating Passage 3 in relation to the other passages in the study (links to *secondary endogenous* texts) and to their own personal experience or knowledge (links to *exogenous* texts), while simultaneously assembling an emerging understanding of the passage (links to *primary endogenous* texts). As these readers moved from the middle to the end of the passage, they continued to link to *primary* and *secondary endogenous* and *exogenous* resources, continually situating their developing understandings within the passage, within the task environment, and outside the task environment. It appears that these readers allowed texts from the other passages to "influence" their ongoing understandings of Passage 3 as they read and envisioned the whole array of textual resources as part of an open, ongoing dialogue—texts intersecting texts.

John provides a good example of an *inter*textual reading of Passage 3. He began his *inter*textual reading by making two *secondary endogenous* links and two *exogenous* links. His first link, which occurred while reading the first paragraph, was back to Passage 2 comparing how the soldiers felt about army life:

> Oh, it [Passage 3] says "they hated regimentations" . . . all the soldiers. But in the last passage [Passage 2] that guy really enjoyed the army. I don't know if it means the same thing or not, but it's like they're opposite.

At the beginning of the second paragraph he linked to an *exogenous* text about his own knowledge of the labels "Johnny Rebs" and "Billy Yanks":

> Oh, "Billy Yanks." That's kind of a . . . I haven't really heard of that . . . I mean yanks and rebels. You know, I've heard of a "Billy Yank" and "Johnny Reb." That's kind of a neat acronym I guess, or whatever they're for. What they actually were, the Confederates and the North.

At the end of the second paragraph he underlined "Probably one out of every four or five Billy Yanks was of foreign birth" and voiced his awareness of a nonexistent (*null*) *exogenous* text:

> I never even thought about this . . . how that "one out of every four or five" Yankees were actually foreign people. I didn't really think the Civil War went on that long to have that many people immigrate into the country. I just never really even considered the idea of how there was that much immigration. I don't know the reason why.

At a break between paragraphs on the first page he drew a line across the page, paused to think for a moment and said:

> Right now I'm just kind of thinking how this is totally different than the other two passages [Passage 1 and Passage 2], 'cause the other two deal with war in the sense of just being at the battlefield and this [Passage 3: *Johnny Rebs and Billy Yanks*] is just talking about who is in the battles and who the people were, and things like that.

John continued to situate his emerging understandings in this way as he moved throughout the rest of the passage. While reading in the middle of the passage he linked back to the first two passages, comparing the different writing styles and speculating about what relationship the authors may have had with the war. And finally, near the end of Passage 3 he linked the "enthusiasm" and "dash" of rebel soldiers to the "adventure" sought by the Union soldier in Passage 2.

John also generated a fair number of *primary endogenous* links as he moved through Passage 3, most of which were *local* ($n = 9$) and *regional* ($n = 3$). His *exogenous* links tended to be to *general world knowledge* texts, not explicitly traceable to his high school history class, as was true with Caroline. As such, there was less specificity as to the proximity of his *exogenous* links.

Extratextual. A final reader exhibited a linking profile that I called *extratextual.* She situated Passage 3 exclusively in terms of her own personal experience or knowledge (links to *exogenous* texts). In addition, she gave little evidence of simultaneously assembling an emerging understanding of the passage (links to *primary endogenous* texts) and never situated the passage in relation to other passages in the study (links to *secondary endogenous* texts), even after the complete reading. This reader constructed textual meanings beyond the passage, rarely allowing anything but her own personal preferences and knowledge to "influence" her understandings of Passage 3. That is, she read the passage strictly in terms of her own experiences.

Dana gave the *extratextual* reading of Passage 3. She gave a strikingly different reading of the passage than did the other seven students. Her reading differed because she mostly linked outside the task environment (81.5% were *exogenous* links; by far the largest proportion for any reader). Moreover, the character and tone of her links had a unique look and feel. She began reading the passage by situating her understandings in relation to *exogenous* texts and continued to do so throughout the rest of the passage. Rarely did she provide evidence of links to *primary endogenous* texts, and she never connected her understandings to *secondary endogenous* texts in the task environment.

Dana's *exogenous* links can be divided into two groups. The first, and smaller, group of *exogenous* links were similar to those the other students had generated: to movies, books, history class, *general world knowledge*, and so forth. The second, and much larger, group of *exogenous* links were to her own personal preferences. In other words, Dana seemed to have clear preferences about her interests, likes, and dislikes. If a text had personal meaning to her she liked it and was interested. Otherwise she found fault with it and became disinterested. An example of a link to one of these *exogenous* personal preference texts occurred when she underlined the "first great modern war" near the middle of the passage:

> "First great modern war," puts me off again because . . . I don't like that.

Here Dana expressed her dislike for the wording of an expression. Apparently she found the language to be unfamiliar to her, and therefore frustrating and hard to relate to. But other *exogenous* links indicated that she disliked, or was not interested in, the content of the passage. After the author provided the number of ethnic soldiers for each side, she underlined "15,000 to 200,000" and said:

> It is not meaning anything to me yet. I can't empathize with it.

This statement seemed to epitomize the personal preference *exogenous* links of Dana. If it did not mean anything to her and she could not empathize with it, then she nulled the text.

What was meaningful to Dana and with what could she "empathize"? By piecing together what she said in her think-aloud episodes for this passage, it appears that the things that meant something to her personally were novel items about people and events. For example, she found the description of the "St. Patrick's Day celebration" to her liking:

> This is interesting because it is something you don't hear about war or . . . about celebrating St. Patrick's Day.

When she read about the "80-year-old" soldier of the 37th Iowa she said:

> It is odd to think of "80-year-old" soldiers and that makes it interesting again because you don't ever hear about that.

Overall, facts about people and events about which Dana was unfamiliar were of interest to her.

This first analysis, which explained normative patterns and idiosyncratic readings of Passage 3, again highlights the variability of the eight readers in referencing and maneuvering among textual resources. As the three linking profiles suggest, readers demonstrated preferences to link either within, between, or beyond the passage boundaries. It was the realization of these preferences that prompted me to pursue a second analysis.

Discourse Stance

This second analysis examined a more primary intertextual link—*discourse stance*—which reveals readers' postures towards and assumptions about the task environment. While analyzing the data for Passage 3 (and the other passages in the tableau), a range of stances that students used to position (or link) themselves in relation to the passages was revealed. Readers not only linked texts from *endogenous* and *exogenous* resources, but they also linked themselves to what they were reading in terms of a discourse stance. Put another way, it seemed as if there was a sociopolitical dimension to the students' intertextual linking. Texts were not just neutrally or apolitically connected, as a kind of sterile, cognitive act (i.e., one idea to another, or one character to another). But instead, readings were shaped, guided, and controlled by an agenda of broader sets of discourse linkages—often unvoiced by and implicit to the readers—yet reflected in their linking profiles. These discourse architectures were brought forth by this second analysis. Using the primary and secondary information sources, as well as the tables and figures constructed from the think-aloud episode coding schemes, three discourse stance patterns emerged. The cases of Caroline, Janet, and Dana portray these stances.

Case one: Caroline. Readers who adopted the first stance maneuvered mostly among *primary endogenous* textual resources. They read as if they were "buried" in a passage, trying to find or uncover the author's meaning. They entered and worked within a "textual world" constructed and largely defined by appeals to the author's authority. They read deeply into the passages and looked for a unifying, underlying meaning. I refer to this discourse stance as *logocentric*. This term comes from the deconstructionist notion of *logocentric discourse*, in which meaning making centers around the building of logical and rational arguments by examining the language and logic used by the author(s). *Logocentric*, as used in this final analysis, refers to the reader who systematically works toward an understanding of a passage through a desire to construct meaning circumscribed by the author. Caroline is one incarnation of the *logocentric* discourse stance.

The first hint of Caroline's *logocentric* stance in the think-aloud episodes is found in the long strings of references to *primary endogenous* resources. Already alluded to in her reading of Passage 3, they occurred in her readings of other passages as well. For example, while reading Passage 2 she produced a series of twenty *primary endogenous* links in a row. In fact, Caroline generated the highest proportion of *endogenous* links among the eight students for all passages. Four-fifths of the textual resources she referenced were inside the task environment (80.7%). In contrast, the group only referenced *endogenous* resources three-fifths of the time (60.6%). Of her *endogenous* links, the largest proportion were *primary endogenous* (80.7%) and *local* (56.5%). Her strong tendency to transact mostly within a passage while constructing a "textual world" suggests a *logocentric* way of reading.

What is most striking about Caroline's transcripts is the absence of her own voice. She does not refer much to herself, but instead references the passage-based texts and places them at the intersection of other passage-based texts. She "absents" her own meaning by privileging the author's. The few *exogenous* references she makes have little to do with her own experiences (*primary* texts). Instead she focuses on ideas, events, and images from U.S. History, English, and TV (*secondary* texts).

Thus, Caroline followed the story line and did not consider possibilities "outside" of the passage. This was evidenced in expressions like "the main point," "the way the author presented it," and "get something out of reading," as well as in her explicit references to passage-based readings:

> I usually just take whatever I am reading for the surface meaning.

At times her linking within the author's "textual world" was very visible. She flipped back and forth between pages, connecting textual units. For example, while reading at the bottom of page two and top of page three of Passage 5, she stopped reading, underlined " 'Is there anything I can do?' I [the author] say" and " 'Who are you?' the man asks," and started flipping back and forth between pages. After a long pause she said:

> Okay, here is a bit of repetition when the doctor asks again, " 'Is there anything I can do?' " And the man says, " 'Who are you?' " again. Kind of strange that he doesn't recognize the doctor's voice.

Thus, Caroline seemed to have one established criterion that guided her reading: Figuring out what the *passage* meant. Evidence of this criterion, and its origin, surfaced in the debriefing interview when she said:

> [I read the] essays . . . like the way we read in English, you know: introduction, body, and conclusion.

When I asked her to tell me more about this way of reading, she said it would be like:

> If the teacher said, "Well, try to dig down deep and see what it [the passage] really means, and read it very carefully and try not to miss details."

Her teacherly construction sounds like the reconstructed echoes of real life teachers from her past.

Finally, Caroline voiced being aware of her *logocentric* stance when she discussed her metaphor for reading the passages. She said:

> *Caroline:* I guess it is sort of like when you're walking along and the ground is rocky and everything, and it seems like it is really hard. You know that there is something under there, so you have to dig and you realize that there's just a really small layer of rocks on that top, and under that it's soft . . . then there is something there.
> *Doug:* How do you get down to where the something soft is?
> *Caroline:* You just need to do a little digging. It takes a bit of effort. But then it's easier than you think it was . . . I mean than you thought it would be.
> *Doug:* You said that there is something underneath the thin, hard top layer. What is it that is there?
> *Caroline:* It's just sort of hidden meaning . . . what's behind the words. Maybe good dirt [laughs], good soil.

Her *digging deeply* metaphor characterizes well the stance of a reader who is "buried" in the passage, trying to "unearth" the author's meaning.

Case two: Janet. Readers who adopted the second stance maneuvered among a fairly even mix of *endogenous* and *exogenous* resources. As they read they "explored" possibilities with texts, considering alternative interpretations as equally plausible and equally well supported by an enlarged constellation of textual resources. They entered and worked within several "textual worlds" constructed by appropriating various authorities and by reading texts in terms of a plurality of other texts. I refer to this discourse stance as *intertextual* because these readers produced all types and varieties of meaning from the same tableau.

The *intertextual* reader is dedicated to multiplicity, to a field of play that opens meaning. This reader adopts a *logocentric* stance at times, but only as one of many stances that can be assumed on a field. In the words of Foucault (1972), an *intertextual* reader is engaged in opening "a field of possible options" that enable "various mutually exclusive architectures to appear side by side or in turn" (p. 66). By taking the *intertextual* stance, this reader is positioned on a *multivocal* field of play (as opposed to the *univocal* field implied in a *logocentric* stance). Petrosky (in press) describes this multivocal field as "a space where a multiplicity of interpretations might exist in a tentativeness open to examination and re-examination from multiple perspectives" (p. 6). Furthermore, the *intertextual* stance openly and comfortably acknowledges and makes visible what Bataille (1988) calls the cracks, contradictions, and disruptions of meaning making. *Intertextuality* is a discourse of dispersion, not of unity. In this analysis, then, *intertextual* refers to a reader who works toward understandings by openly considering and constructing various textual arrangements. Janet's case study serves as an example of the *intertextual* discourse stance.

The first hint at Janet's *intertextual* stance in the think-aloud episodes is found in strings of references to the full range of textual resources. For example, notice the various ways she considered Passage 2 while reading. She first considered the passage in terms of a comparison with Passage 1:

> First person this time [Passage 2] instead of third person [Passage 1].

She goes on to summarize several sentences and comment on them:

> It says that he was listed in a regiment that was to be wiped out before the war was over. And he almost makes it sound like he knew it was going to be or something.

Her next move was to consider the passage again in terms of the first passage:

> "Civil War," says which war it was. Some of these [Passage 1] you are not sure which war they are in . . . some war stories.

After making a few local links, she then considered the passage in terms of another war:

> "Fights" and "skirmishes," that's a lot of what guerrilla warfare in Vietnam was like.

She then advanced into the passage and generated four sets of local summary linkages in a row, such as:

> They were happy they were going to be killed.

Then she moved back out of the passage and considered it in terms of something she had heard before:

> It would be the "other fellow" [who got killed] . . . a lot of different things that happen to people, you hear that everyone thinks that it is going to be the other person; the other person will get cancer, or raped, or whatever.

And at the bottom of the first page she thought of the passage in terms of English class:

> Putting in accents . . . It was mentioned in English class how different authors are good at using different accents. I like stories that do put in the accents of different characters.

As her think-aloud episodes reveal, Janet considered what she was reading not just in terms of the passage (or author), but in terms of a variety of resources. She considered Passage 2 in terms of Passage 1, other wars, things she had heard, English class, as well as from within the passage. This referencing profile suggests that she took various perspectives, understandings, and textual arrangements, including, but not limited to, an authorial representation.

Other findings further suggest Janet's *intertextual* stance. She generated an even mix of links to *endogenous* (54.6%) and *exogenous* (45.5%) textual resources. The near even balance in her textual resources is the most symmetrical of all eight students. Her tendency to transact within and outside the task environment, as well as within and outside the passages, in constructing "textual worlds" suggests an *intertextual* orientation to reading.

Through her think-aloud comments she frequently entertained indeterminate meanings and maintained open understandings while she read. For example, while reading about peasants plodding along a road in ankle deep dust in Passage 4, she said aloud:

> I am not really sure what era this is, but since the others [Passages 1–3] were Civil War, then this probably would be too. Though I am not sure.

The matter-of-fact tone with which she said "I am not sure" suggests she left her interpretation indeterminate and unsettled. In several other places she tagged her think-aloud episodes with similar expressions indicating that she did not rush to put closure on meanings and sort them into determinate structures. Other utterances that indicated her consideration of alternate perspectives were statements like: "according to our textbook . . . ," "Mrs. Dyer [the history teacher] said . . . ," and "I think that . . . ." In each case she acknowledged the source of a textual arrangement, which indicated her sensitivity and awareness of multiple perspectives. She appeared to be a confident and experienced reader and thinker who was not driven to bring determinate closure to her meaning making.

Another way Janet indicated her *intertextual* stance was by frequently constructing textual meaning in terms of other texts. An example of this adjacent positioning occurred right after Janet finished reading Passage 1. She said:

> It said near the start that it was a badge of honor to have a wound and then later on it starts being treated as a shameful thing instead. And then at the end he says I suppose it doesn't matter so much . . . after all.

She casts different views of a wound throughout the passage next to each other and then moves on. She did not impose a unified explanation or rationale on her reading; she seemed content, even proud, to leave open several possibilities.

Janet voiced her own awareness of her *intertextual* way of reading through two metaphors. When I asked her: "If you had to choose a metaphor to describe the way in which you thought while reading these passages, what would that metaphor be?" she replied:

> I guess it would be like having a cloth of a particular pattern and . . . or marker or something. And you have got a whole bunch of other colors and patterns all around, and every now and then you notice, "Well, this is like that one in some way: same color, similar pattern or shape or whatever." And the connection might not be as obvious to someone else, "Well that doesn't look the same," and, "Oh no, don't you see this?"

Her *cloth* metaphor parallels in a rather remarkable way the stance of a reader who temporarily positions texts of similar (or different) "patterns, colors, and shapes," and realizes the openness and indeterminacy of the connection construction process by saying that someone else may not notice the same ones. Later, she used a Freudian metaphor to describe when she would make an intertextual link:

> I'd make a connection when I saw one. There were probably some that I would start to make and think, "Well that isn't very important or very interesting" or "That would take too much explaining." It's sort of like what Freud says about your subconscious censoring what you're saying but . . . [laughs] . . . not allowing some things to come to the conscious.

Her use of two metaphors—the *pieces of cloth* and the *conscious/subconscious*—indicate her commitment to multiplicity.

Case three: Dana. The reader who adopted the third stance, Dana, maneuvered mostly among *exogenous* textual resources. She read as if she were "fighting" with the passage, trying to absent the author's meaning by asserting her own. She entered and worked within a "textual world" constructed largely by exerting her own authority. In short, she was *resistant*. Resistant as used in this analysis refers to a reader who systematically works toward understandings through asserting her own authority. These understandings are circumscribed by the reader, not the author. This reader positions herself on a *univocal* field of play, considering only her interpretations as valid. Rather than a discourse of *logocentrism* or *dispersion*, her transcripts read like the discourse of *egocentrism*.

The first hint of Dana's resistant stance in her think-aloud episodes is found in the long strings of references to *exogenous* textual resources. I have already alluded to this in her reading of Passage 3 in the previous analysis, but they occurred in her readings of other passages as well. For example, over three-fourths of her links while reading Passage 1 were *exogenous*. While reading, she considered this first tableau strictly in terms of herself: a film she saw, her knowledge about men's behavior in battle, her sensory response, her ability to empathize, and a book she read, to name a few. In each case she made references to "I" or "me" in considering the passage. This referencing profile suggests that her own perspective, understanding, textual arrangement, and personal preference took precedence while reading.

Even in Passage 5 her think-aloud episodes indicated this propensity to reference a passage in terms of the self:

> I like the "I" again. I like people stories.
> This reminds me of when I was a candy striper in a hospital and I always saw these really nasty skin conditions . . . and it brought that back.

The frequent references to "I" and "me" throughout reveal that Dana characteristically asserted her own voice over that of the author's and others.

Dana's *resistant* stance to the thoughts and ideas she encountered while reading left her relatively unchanged by the whole reading experience. She often indicated her detachment by uttering such remarks as "I can't relate to it," "It makes me lose interest," "I can't empathize with it," and "It's foreign to me." At other times she explicitly voiced that the passages had no impact on her:

> This [Passage 1] didn't do a thing [to my thinking].
> I've forgotten them [the passages] already. So they weren't really that important.

Her responses indicate that the impact of these reading experiences would only be felt in terms of her own agenda(s).

She generated the highest proportion of *exogenous* intertextual links among the eight students. Nearly three-fourths of the textual resources she referenced were outside the task environment (71.4%). In contrast, the group only referenced *exogenous* resources two-fifths of the time (39.4%). This strong tendency of hers not to transact with the passages in constructing a "textual world" suggests a *resisting* way of reading.

Dana seemed to have one established structure or criterion for judgment that she imposed on the passage(s): Did the passage focus on the inner lives and/or relationships of people she could relate to personally or empathetically? If the passage met this criterion, then she would become interested and engaged. If the passage did not, then she would disengage and become disinterested and bored. She aptly described her moving in and out of engagement with the passages as "waves of interest."

That interest was her criterion was evidenced in a number of ways. One way was through her explicit references to this criterion. For example, Dana described what she thought about while reading a book by Kathy Acker in this way:

> [She] discusses how she feels in it. It is interesting that a lot of the things sometimes relate to me, and a lot of them don't. If they do relate to me then I like them. If they don't, and I've never felt like the way she was saying she felt, then it just kind of goes by me.

Finally, Dana provided insight into how she operates from this resisting stance when she discussed two related metaphors in the debriefing interview that described her thought processes while reading. The first was the *MTV metaphor*, which she described in this way:

> Like when you watch MTV, you can think a lot of other things at the same time, and that's more like doing this [Passage 1, Passage 2, and Passage 3] . . . Like on MTV you can do dishes at the same time.

Her second metaphor was the Soap Opera/Movie metaphor, which she described in this way:

> If you get involved in soap operas or something, then you're not thinking about other things, but you're involved in the soap opera. Or, if you're watching a movie . . . actually, watching a movie is the best thing cause it's like all dark around you . . . and you may have popcorn, but that's it. You're just in the movie here [Passage 4 and Passage 5].

Notice that in describing these two metaphors Dana divided the passages into two groups, those she read using the MTV metaphor [Passages 1, 2, & 3] and those using the Soap Opera/Movie metaphor [Passages 4 & 5]. The net result is that her metaphors characterize well the stance of a reader who dominates the texts with her own agenda, entering the "textual world" only when it fit her criterion.

As the cases of Caroline, Janet, and Dana point out, these readers adopted different postures towards the task environment. The analysis reveals readers' discourse architectures and highlights the sociopolitical dimensions of their intertextual linking.

CONCLUSIONS

As the two analyses presented here suggest, the eight able readers in this study referenced and maneuvered among a wide array of textual resources while reading the five-passage tableau. In response to the first question posed at the outset of this story, the intertextual metaphor did provide a promising way to understand what these readers reported doing while comprehending within, between, and beyond the passages.

That is, their meaning making can be viewed as transposing texts into other texts, absorbing one text into another, and building a mosaic of intersecting texts. Regarding the second question, the intertextual metaphor was also helpful in analyzing the types of links the readers generated. There seemed to be two general types of links: (a) those between ideas, characters, settings, and so forth, on which the first analysis focused, and (b) the more primary link of a discourse stance, to which the second analysis attended.

But this story is more than a recounting of a story line. It foregrounds a very different view of readers when you look at them read across passage boundaries. Reading appears to be more than finding the appropriate schema, activating it, and filling in the slots. As can be seen through their think-aloud episodes, these readers mobilize and assemble knowledge in situation-specific configurations, formulate signifieds as they encounter textual sign systems, and transpose, absorb, and intersect texts. Interest, novelty, and affect were powerful shaping forces in their linking. By tracing the "location" and spatial/temporal proximity of textual resources, the layer upon layer of complexity in reading is exposed. Although we have acknowledged this among ourselves in the reading research community, the central artifacts of our scholarly inquiry have only begun to voice concern for this layered complexity of the reading process. Whatever the case, these data suggest that our models of expert readers have been too simplistic; merely looking at the parts cannot do justice to understanding the whole.

There is another side to this story. We have been unnecessarily narrow in this field by looking at comprehension in terms of single, individual passages. For example, reading lessons have traditionally been constructed around and focused on the activities that occur *before*, *during*, and *after* the reading of a single passage. The activation or building of prior knowledge, which has typically been earmarked for *before* reading, has often implied that prior knowledge is something that feeds into the understanding of an immediate passage, rather than into the understandings emanating from textual transactions for future understandings or even looping backward. Thus, prior knowledge is not solely something that readers bring to the passage and unload before they read. Rather, the results of this study indicate that it is something that is utilized, constructed, and reconstructed by readers throughout reading. As the students in this study have shown, understandings of one passage can "influence" or "color" understandings of subsequent passages—implicitly or explicitly—throughout the entirety of the reading encounter.

Additionally, the questions we have asked students *during* and *after* reading have generally been intended to "direct" students through the passage or "retrace" their steps through the text. No matter the type of question or classification scheme—factual or inferential, analysis or synthesis, text implicit or script implicit—the focus has been largely on directing students toward a within, intrapassage, representation, rather than on using their understandings of passage to further understand subsequent passages, or to view it as part of a larger set of understandings. In other words, the reading of a passage has been viewed as a terminal task that ends with the discussion of it and does not feed into future and related readings. As many of the students in this study demonstrated, their understandings of one passage "spill over" into their understandings of other passages—both past and future—such that a reading is always open to further interpretations.

Ironically, those students who have typically been viewed as the best comprehenders have been those who have not strayed too far from a comprehension of the passage as an autonomous and discrete entity. This closed view was demonstrated by Caroline's *intratextual* reading of Passage 3 and *logocentric* discourse stance. Even efforts aimed at improving critical thinking and higher order thinking skills have largely focused on having students examine the internal logic and available evidence to support various construals of a solitary passage. The open view demonstrated by John's *intertextual* reading of Passage 3 and Janet's *intertextual* discourse stance suggest that an expanded conception of critical reading is plausible. They both read texts in terms of other texts, examined inter-passage logic and evidence, and referenced a full array of textual resources in their meaning making.

Among the most compelling findings of this study are the students' discussions of the metaphors they read by (Lakoff & Johnson, 1980). The insight with which some of the metaphors capture their linking orientations provides explanatory power far beyond what the frequencies and percentages could communicate. These metaphors brought to the surface the sociopolitical dimensions of meaning making (i.e., their discourse stances). Readers' understandings are seldom, if ever, the result of a mechanical, generic linking process, but instead are shaped, guided, and controlled by larger and broader agendas, often unvoiced by and unaware to the students. The playing out of metaphors like *digging deeply*, *patterned cloth* and *MTV* aptly coincided with the discourse stances of the students. Further investigation of the metaphors readers read by seems worthy of pursuit.

And finally, the construction of this story relied heavily upon a theoretical orientation of reading that transcended and was more interdisciplinary than what any single path could offer. Situating this study at the intersections of three scholarly paths—literary theory, semiotics, and cognitive psychology—made such an orientation achievable. The points at which these three theoretical paths intersect served as invaluable guide posts for the postmodern/semiotic/cognitive view of meaning making I proposed. As the data suggests, these three previously distinct theoretical orientations do indeed mutually inform each other. That is, reading comprises a multifaceted construct in which readers are engaged in *intertextuality* (transposing texts into other texts, absorbing one text into another, and building a mosaic of intersecting texts), *signification* (formulating signifieds as they encounter the signs of texts), and *knowledge assembly* (mobilizing and assembling potential knowledge fragments into situation specific configurations of texts). The "zig-zag" and "ill-structured" nature of reading across passage boundaries necessitates a multi-perspectival view that draws upon an enlarged constellation of scholarly traditions.

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A COMPARISON OF SUMMARY AND JOURNAL WRITING AS COMPONENTS OF AN INTERACTIVE COMPREHENSION MODEL

Joyce Holt Jennings
Northeastern Illinois University

Recent research has focused on the interactive nature of reading and its relationship to writing. The current study draws upon that research and attempts to bring together established work from the areas of reading, thinking, writing, and content learning.

This study examined the influence of two kinds of writing instruction as components of an interactive comprehension strategy on the comprehension of social studies text in the intermediate grades. Specifically, an interactive approach to comprehending expository text developed by Ogle (1986) is presented and contrasted with the more traditional approaches previously applied by the participants. This strategy, referred to as *KWL*, begins with teachers and students focusing upon what is *known* (K) about a topic to be studied. Teacher and students collaborate to develop a collective schema for a new topic. Next, the teacher asks students what they *want* (W) to find out about the topic or what they expect the author to include in the text about the particular topic. After students read the text, the class discusses what they *learned* (L) about the topic. This may incorporate some revision of prior knowledge as students alter their original positions based on new information presented. Finally, the students organize the information, integrating their confirmed prior knowledge and new information gained through reading through traditional outlining, semantic mapping, or webbing, in which information is presented graphically.

To enhance comprehension, students then used one of these organizational devices to write about the material read using summarization or journal writing. Doctorow, Wittrock, and Marks (1978) confirmed that constructing original elaborations for text and using semantic retrieval cues enhances comprehension of text. However, their work was based upon narrative text, stories from a commercially produced reading series. In contrast, the current study focuses upon expository text, informational material typically found in science and social studies textbooks.

One form of writing incorporated into this study was summarization. Carr and Ogle (1987) have provided an elaboration of *KWL* which includes a writing task, *KWL+*. This strategy requires students to use their organizational pattern, an outline, map, or semantic web, to guide them in constructing a summary of the text read. Research conducted at the Center for the Study of Reading has emphasized the value of summarization in comprehending text (Brown, Campione, & Day, 1980).

The second form of writing incorporated was learning journals. A recent trend in writing instruction is to ask students to keep journals. D'Arcy (1987) describes journal writing as an opportunity for students' "thinking onto paper" (p. 42). In journals, students are asked to reflect upon information presented in classroom instruction. This personalized written response is designed to facilitate students' relating newly acquired information to their own prior knowledge, thus creating their personal schemata for a topic under consideration. This linking of new information to prior knowledge is a crucial step in the process of comprehending text (Pearson & Johnson, 1978). A missing element in this area is a research-based verification of the contribution this reflective mode of writing can make to students' learning. The current study attempted to provide some evidence to begin construction of this verification by comparing the influence of two different kinds of writing instruction, summarization and journals, upon students' comprehension of content material.

Thus, the current study compares an interactive model of instruction with a traditional approach. Using this interactive model as a basis, students responded to material presented in class using one of two methods of writing. One of these methods, summarization, has been well established as an effective tool for comprehension. The other method, keeping a learning journal, has received much attention and is advocated by many in the field of writing as an effective way to personalize learning, but has not been substantiated through research (Bowman, 1983; D'Arcy, 1987; Fulwiler, 1980, 1985). Such writing does, however, fit with current learning theory in that linking new information to personal experiences or prior knowledge facilitates learning (Pearson & Johnson, 1978).

The questions posed by this researcher were: First, to what extent does an interactive approach which incorporates writing as a tool for learning affect comprehension of content materials? Second, are there differential effects of these two kinds of writing as related to content learning of social studies text?

METHODS

Participants

To examine these issues, six fifth-grade classes from two suburban schools participated in a 4-month study in which three instructional models were compared. The two schools had similar socioeconomic status characteristics, with both principals identifying the families in their attendance areas as primarily white collar. All participating classrooms were grouped heterogeneously. From each school, one classroom was designated as a control group: Classrooms 1 and 2, comprised of 23 and 24 students, respectively. These classes did not alter their instruction. Four classes were taught to use the Ogle (1986) KWL strategy as a framework for studying social studies and organize the information into a semantic map. Two of these classes, Classrooms 3 and 4, comprised of 24 students each, then followed the procedures presented in the KWL+ model devised by Carr and Ogle (1987) by writing summaries of the information. Classrooms 5 and 6, comprised of 22 and 24 students, respectively, wrote more personally reflective journal entries in response to the text. The total number of participants was 6 teachers and 141 students.

Procedures

Teachers met to determine content to be emphasized, then drew lots to designate which treatments they would represent. Following this selection, the teachers representing the control condition no longer attended group meetings. The remaining teachers received training in the application of the KWL strategy. Training for the writing components was done individually.

Interviews were conducted with teachers and students to receive information about previous instruction. Observations of instruction were conducted to confirm that previous instruction differed from the strategy presented, to provide descriptions of instruction in the classrooms, and to confirm adherence to the respective strategies. Exit interviews with teachers and students provided their reactions to the strategies and suggestions for further study.

Instructional Materials

The basic materials for this study were the students' social studies books, *Understanding Our Country* from the Understanding the Social Sciences Program (King, Rudman, & Leavell, 1981). The teachers selected the unit titled, "The Road to Independence" as the target unit for the study. This unit was comprised of three chapters. Each chapter was divided into three sections for a total of nine sections.

Additional materials included the KWL Worksheet, blank semantic maps, and lined pages for writing summaries or journal entries; these were provided each subject for each section of text included. Thus, each student completed nine cycles of instruction, completing a KWL procedure for each cycle. Samples of all instructional materials are available upon request.

Data Collection

Data collection included both qualitative and quantitative evidence. Although much of the data consisted of interviews and recorded observations, categorized for analysis, other data consisted of pretest and posttest scores and their relationships to one another.

Long-term and short-term comprehension was measured. Short-term comprehension was measured using chapter tests. Students were administered comprehension pretests prior to instruction in each chapter from the unit. These tests consisted of 10 short-answer questions: one tapping the students' awareness of the main idea of the chapter, three textually explicit questions, three textually implicit questions, and three scriptally implicit questions. During intervention, students were administered posttests after each of the three chapters to determine immediate comprehension of that material.

Long-term comprehension was measured using a Category Expectations task, a Word Knowledge task, and a Unit Comprehension task as pretests and posttests. The Category Expectations task was administered to determine students' abilities to categorize social studies information and predict content by listing categories of information they would expect an author to include in a selection about a newly formed country.

Students were administered a Word Knowledge task to determine knowledge of major concepts and vocabulary presented in the unit of study. This task consisted of 30 words, 10 target words from the unit presented, 10 grade-level vocabulary words selected randomly from the fifth-grade vocabulary list compiled by Harris and Jacobson (1986), and 10 nonsense words. Students were asked to indicate whether they knew the words. Then they were asked to define or use the target words in sentences.

A unit comprehension pretest score was obtained for each student by selecting questions from the chapter tests which also appeared on the unit comprehension posttest. Two weeks after intervention, students were administered a Unit Comprehension test consisting of a main idea question and six representative questions from each of the three chapters included in the unit of study. Alternate forms of these tasks were used as pretests and posttests.

Data Analysis

Analysis of instruction. During observations, extensive field notes were taken and class discussion was audiotaped for subsequent transcribing. Class discussions were organized to facilitate descriptions of instruction. First, class discussions were segmented into units. These typically included one initiating comment, followed by multiple responses by both teacher and students which focused upon the topic presented in the initiating comment, and a closing comment, usually evaluative in nature. Next, each comment was categorized across two dimensions: function and relationship to instruction. *Function* refers to the role of the comment within the discussion unit: initiations, responses, and closures. The second dimension, *relationship to instruction*, consisted of eight categories: Conduct Lesson, New Content, Prior Knowledge, Strategy-related Comments, Evaluation, Negotiations, Management, and Unrelated Comments.

To obtain a sample of classroom interactions, this system of categorization was applied to transcripts from one cycle of instruction, selected from the third chapter of the target unit. Selecting a chapter near the end of the unit provided time for teachers and students to become familiar with the strategy before analyzing their discussions. Two independent readers were trained to apply these categories to a sample of the transcripts. The readers who applied this system of classification to the sample transcript worked independently, labeling each comment on a copy of the transcript. Agreement between readers was 96.1%.

From this analysis of instruction, five dimensions emerged which served to characterize instruction in these classrooms. The criteria for selecting these dimensions included their potential impact on instruction and their contribution to differentiating across the participating classrooms. These dimensions included instructional time and pacing; management of reading, including mode of reading and segmentation of text; instructional approaches; instructional environment, including physical arrangement and atmosphere; and the relationship of the interactions to instruction, especially as they related to new content, prior knowledge, and strategy implementation. An analysis of the interactions which revolved around instruction facilitated a description of instruction in each classroom. A summary of these descriptions is presented in Table 1.

Comprehension measures. Short-term comprehension was measured through the

Table 1

Dimensions of Instruction as Observed in Treatment Classes

	KWL + S		KWL + J	
	3	4	5	6
Physical Arrangement	Rows of Four in Columns	Tables of Four Desks	Tables of Six Desks	Pairs in Columns
Atmosphere in Class	Competitive	Cooperative	Mildly Competitive	Cooperative
Segmentation of Text	Paragraphs or Portions of Sections as Specified in Text	Sections as Specified in Text	Paragraphs	Sections as Specified in Text
Reading Mode	Oral by Individual Students to Whole Group	Silent with Partners	Silent	Silent with Partners
Proportion of Student Evaluations	26.5%	17.3%	22.5%	9.5%
Proportion of Instructional Interactions	76.5%	81.7%	74.2%	78.3%
Proportion of Content Interactions	39.1%	39.8%	32.8%	45.4%
Proportion of New Content Interactions	19.5%	22.1%	25.7%	26.0%
Proportion of Related Content Interactions	18.7%	9.3%	4.7%	11.5%
Proportion of Related Experience Interactions	0.9%	8.4%	4.7%	7.9%
Total Proportion of Prior Knowledge Interactions	19.6%	17.7%	9.4%	19.4%
Proportion of Non-Instructional Interactions	23.4%	18.2%	25.9%	21.7%

administration of chapter pretests and posttests. Alternate forms of these short-answer 10-item comprehension tests were administered as pretests before the presentation of each chapter and as posttests immediately following instruction in each chapter. Analysis of these results afforded the opportunity to observe instructional trends as they developed during instruction.

Long-term comprehension was measured using three tasks. Scores on pretests and posttests of category expectations, word knowledge, and comprehension were compared using multivariate analysis of variance. A repeated measures procedure was applied in which these test results were related to instructional group, school, and aptitude. Between-subjects factors were instruction, school, and aptitude. *Instruction* refers to the strategy used in each condition: traditional, KWL + S (KWL + summary) and KWL + J (KWL + journal). *School* refers to one of the two schools participating in the study. Because each condition was represented in each school, this variable was used to determine differences in learning outcomes between classes using the same strategy. *Aptitude* refers to high or low aptitude students as determined by placement above or below the median score (35) on the standardized tests administered in the previous fall. The within-subjects factors used in this procedure were time and task. *Time* referred to the two administration times of pretests and posttests. *Task* referred to the three measures used: word knowledge, category expectations, and comprehension.

Instruction Related to Learning Outcomes

The final procedure was to relate the characteristics identified within each classroom to the learning outcomes experienced by that classroom. After the learning outcomes were analyzed by class, characteristics which were shared by the classes with similar learning outcomes were identified. This allowed me to compare classes across the two dimensions of learning outcomes and instructional characteristics. This comparison facilitated the construction of a description of an instructional environment which seemed to enhance the implementation of an interactive strategy, such as KWL.

RESULTS

Immediate Comprehension Measures

Immediate comprehension was measured by administering pretests and posttests for each chapter included in the unit of instruction. Mean scores for these tests are presented by instructional condition in Table 2.

These results indicate that the KWL+ strategy has certain characteristics that make it more effective than typical traditional methods. This interactive strategy may provide some additional support not present in the traditional methods used in the Control condition as students attempt to understand text. There is also evidence which indicates that the KWL + J strategy has some unique properties which show effectiveness sooner than the KWL + S strategy.

Table 2

Mean Scores (and Standard Deviations) on Chapter Tests Reported by Condition

	Control	KWL + S	KWL + J
Pretest 1	0.44 (0.9)	0.36 (0.5)	0.21 (0.4)
Posttest 1	3.25 (1.8)	3.73 (1.7)	6.57 (2.0)
Pretest 2	0.86 (1.4)	1.52 (1.2)	1.22 (1.0)
Posttest 2	5.14 (1.9)	5.57 (2.1)	7.70 (1.6)
Pretest 3	0.66 (0.8)	0.30 (0.5)	0.21 (0.3)
Posttest 3	2.45 (1.8)	4.05 (2.9)	6.64 (2.1)

Retention of Content

In addition to immediate comprehension during instruction, students' retention of content was also considered. This was assessed by three tasks, Word Knowledge, Category Expectations, and Unit Comprehension, administered as pretests and posttests. The results are presented in Table 3.

This table indicates that the students in the two treatment conditions obtained higher mean scores on all three posttest measures than did the students in the Control condition. Students who received instruction in the KWL + J strategy obtained higher scores on both the Unit Comprehension Posttest and the Word Knowledge Posttest than the other two instructional groups. The KWL + S group obtained higher scores on the Category Expectations task. The control group obtained lower scores than both treatment groups on the three posttest measures. These scores indicate that not only are there differences between the groups receiving instruction in the KWL strategy and the control groups, but that there are also differences between the groups receiving KWL + S and KWL + J instruction. In the Word Knowledge task, both the KWL + conditions provided stronger support for students' gaining an understanding of vocabulary words related to content, with the KWL + J strategy obtaining better results than the KWL + S strategy. However, this trend was reversed on the Category Expectations task. Specifically, there may be some property within the basic KWL strategy which

Table 3

Mean Scores (and Standard Deviations) on Word Knowledge, Category Expectations, and Unit Comprehension Tasks Reported by Condition

	Control	KWL + S	KWL + J
WKPre	1.40 (1.95)	1.36 (1.23)	1.29 (1.60)
WKPost	3.30 (2.30)	4.85 (2.38)	6.69 (2.01)
CEPre	14.07 (8.17)	15.66 (7.88)	11.22 (4.85)
CEPost	12.33 (8.71)	18.31 (8.86)	13.28 (5.74)
UCPre	1.59 (2.34)	.94 (.99)	.79 (.96)
UCPost	6.73 (3.82)	9.12 (4.32)	12.37 (4.32)

facilitates students' abilities to categorize information as a basis for predicting related content. However, this characteristic may be more strongly emphasized through writing summaries than through journal writing. Finally, on the Comprehension task measuring the amount of content retained over time, the KWL + conditions showed significantly greater gains than did the Control condition. Further, the KWL + J showed even greater gains than did the KWL + S condition. In a post hoc analysis, a Scheffe test confirmed that there were significant differences not only between the treatment conditions and the control conditions, but also between the two treatment conditions.

Effectiveness of Instruction

To test instructional effects, a 3 × 2 × 2 × 2 × 3 (instruction × school × aptitude × time × task) repeated measures multiple analysis of variance was conducted. The results are presented in Table 4.

First, the interaction of instruction by time by task was considered. This effect was statistically significant ($F = 2.61$, $df = 4$, $p < .037$). This indicates that the interactive strategy was significantly more effective than the traditional strategies used in the Control conditions. This was confirmed by the Scheffe test in post hoc analysis.

The other interaction of interest is the instruction by class by time by task interaction. As shown in Table 4, this interaction is statistically significant ($F = 3.95$, $df = 4$, $p < .004$). This indicates that there is also a significant difference between classes receiving the same type of instruction.

Effects of instruction by class. To show the differences between classes, the mean scores on the pretest and posttest measures on each of the three tasks under consideration, the Word Knowledge task, the Category Expectations task, and the Unit Comprehension task, are reported by class in Table 5.

These scores indicate clear differences between the two classes receiving KWL + S instruction as well as some differences between the two groups receiving KWL + J instruction. Thus, not only were there differences in instruction, there were

Table 4

MANOVA F Values and Significance Levels for Instructional Groups, School, Aptitude, and Time by Task

	df	*F*	*p*
Instruction × Time × Task	4	2.61	.037
Aptitude × Time × Task	2	3.03	.051
Instruction × School × Time × Task	4	3.95	.004
Instruction × Aptitude × Time × Task	4	.22	.926
Instruction × School × Aptitude × Time × Task	4	2.18	.073

Table 5

Mean Scores (and Standard Deviations) on Word Knowledge, Category Expectations, and Unit Comprehension Tasks Reported by Class

	Control		KWL + S		KWL + J	
	1	2	3	4	5	6
WKPre	1.6 (2.4)	1.2 (1.3)	1.8 (1.2)	0.9 (1.0)	1.5 (1.8)	1.1 (1.4)
WKPost	3.4 (2.6)	3.1 (2.0)	3.8 (1.8)	5.9 (2.5)	5.7 (1.8)	7.5 (1.8)
CEPre	15.4 (10.1)	12.7 (5.6)	14.8 (9.3)	16.6 (6.0)	12.1 (4.5)	10.5 (5.1)
CEPost	12.1 (9.9)	12.5 (7.6)	14.4 (8.0)	22.2 (8.1)	16.0 (6.1)	10.6 (3.8)
UCPre	1.8 (2.9)	1.3 (1.4)	1.0 (1.0)	0.8 (1.0)	0.6 (0.8)	0.9 (1.1)
UCPost	5.6 (3.8)	7.8 (3.6)	6.5 (3.6)	12.0 (4.3)	10.2 (3.3)	14.2 (4.2)

also differences in learning outcomes as measured by the Word Knowledge task, the Category Expectations task, and the Unit Comprehension task.

How did the classes within treatment groups differ in implementation of the strategy? And, how are these differences related to the learning outcomes? These questions will be addressed in the ensuing discussion. Their answers should provide a foundation upon which we may construct a model of the instructional environment in which an interactive strategy such as KWL and students' writing can converge to enhance learning.

DISCUSSION

These results confirm the merits of an interactive comprehension strategy to facilitate students' understanding of social studies text. They also corroborate the value of students' writing as contributing toward comprehension. In addition, students who used the KWL strategy and wrote journal entries scored significantly higher on these measures than did the students who used the KWL strategy and wrote summaries. The only exception was the Category Expectations task, which indicated slightly higher scores for the KWL + S students. Thus, it is apparent that an interactive comprehension strategy such as KWL is an effective tool for understanding intermediate social studies text. It is further apparent that the genre of journal writing is more effective than summarizing in most measures of comprehension. These findings raised three new issues. First, why would journal writing be more effective than summarization for three of the four measures used in this study? Second, why did the results from the Category Expectations task differ from other comprehension measures? Third, why were the strategies more successful in some classrooms than in others?

Effectiveness of the KWL Strategy

What are the characteristics of this interactive comprehension strategy which incorporates writing that make it effective for students comprehending social studies text? First, there are the components of the strategy itself. When students are asked what they know about a topic, their schemata for that topic are activated. From the very beginning, the focus is on the students and what they bring to the learning experience rather than on the information presented in the text, as is true of other models, such as SQ3R (Robinson, 1962).

In the W component of KWL, students generate questions. Studies done by Manzo (1975) and Raphael and Wonnacott (1985) have confirmed the value of using questions to provide a framework for reading. In the KWL strategy these questions are not only student-generated, they are also based upon the students' search for information. The students identify their own needs and frame their questions to fulfill those needs for further information. Thus, the purposes established for reading are personal; students are invested in the reading experience which follows.

Following reading, students identify those questions which were answered in the text and those which require further exploration. Next, they organize the information into categories in the form of a semantic map. This ability to develop categories of information enhances learning in two ways. First, combining information into categories facilitates its storage in long term memory and subsequent retrieval into short term memory. Second, these categories then become the framework for subsequent study of similar texts. For example, in the present investigation, after studying our new country developing its rules and selecting its form of government, students were asked to transfer this knowledge to similar circumstances in hypothetical countries. This could become a systematic approach to the study of new governments, laying the foundation for future learning.

If we stopped there, KWL could provide a nice model for activating schema, presenting new material, and providing a framework for organizing new information. However, Tierney (1990) posits that models grounded in schema theory alone have been found lacking.

Thus, we are led to KWL + (Carr & Ogle, 1987). This elaboration of KWL takes the process a step further as students write summaries about the information gained in reading. This instructional model is based upon Wittrock's (1978) generative model of learning in which students construct summaries or topic sentences to improve comprehension. In the KWL + S condition of the current study, students combined a semantic map for organization and an original elaboration in the form of a written summary. This technique was quite similar to that implemented by Doctorow, Wittrock, and Marks (1978). The results of the current study provide further substantiation that these processes combine to improve comprehension and long-term memory.

Yet, even this strategy was not found to be the most effective of the conditions presented in the current study. Of even greater value was the KWL + J strategy in which students responded to the reading by writing in a learning journal. In these journals, students assumed roles, speculated about events surrounding those they were reading about, or identified with individuals living through those events. Through their writing, these students were, in effect, reading between the lines. This strategy was student-centered from beginning to end. Students and teachers became engaged in the learning process from the moment the teacher asked, "What do we already know about . . . ?", and they made a personal investment in the reading experience through generating their own questions. Their engagement continued through their attempts to bring together their prior knowledge and the new information acquired as they constructed semantic maps. The final chapter in this personal approach to learning occurred when they wrote about their own learning experiences and shared that experience with an interested friend.

Effectiveness of Journal Writing

The overall success of the journal writing strategy has several possible explanations. First, perhaps the more personal writing that takes place in keeping a journal maintains a higher level of student interest than does the summarization technique. D'Arcy (1987) has reported that students find journal writing provides an avenue for closer communcation with their teachers, approaching an atmosphere of a private lesson. An atmosphere approaching this occurred in Class 6 as students independently shared their writing with peers and the teacher responded to their writing individually.

Second, perhaps the speculations, the elaboration of historical events from a participant's perspective, which many of the journal writing students used, helps students tie current content to prior knowledge more effectively. Perhaps there is a stronger feeling of ownership on the part of the writer in journal writing than can occur in the more formal reverbalization of information which takes place in summarization. Similar results were found by Fulwiler (1980, 1985) and Bowman (1983).

Third, perhaps students participating in journal writing received enough practice in summarizing through the semantic mapping procedure so that they actually approached the content through two different processes, whereas those in the summary groups simply engaged in alternate forms of similar processes. Thus, although requiring no more instructional time than that required in the summary writing, perhaps the journal writing provided a new dimension to the learning process.

The Category Expectations Task

What conclusions can be drawn about the Category Expectations task? In prior research, Ogle, Jennings, and Carr (1987) found that this task was highly correlated with the major comprehension measure. In the current study, the Category Expectations task was more highly correlated with the reading achievement test score used to determine reading aptitude than with other measures of comprehension. The analysis of variance procedure also indicated an interaction between task and students' aptitude. Although there may be some indication that the summarization technique provides additional practice in categorization and organization that is omitted when students write journal entries, its outcomes were more effective for only one aptitude group. In all other areas, the KWL + J strategy resulted in greater gains across aptitude groups.

What can we conclude from this finding? First, we should consider the Category Expectations task itself. In this task, students are asked to list the kinds of information they would expect an author to include in writing a chapter about a new country. Although this is a rather abstract task within the KWL strategy, students are guided to predict the kinds of information they expect the author to include in writing about a particular topic. This helps to account for the greater gains of the treatment conditions, overall, but it does not address the differences which occurred between the two conditions or between the two aptitude groups.

It is possible that the tasks inherent in the two strategies triggered differential results. Perhaps the higher aptitude students more readily transferred the organizational skills acquired in the mapping and summarizing tasks of the strategy to new tasks, whereas the lower aptitude students required more direct instruction or more practice in accomplishing this transfer. A possible explanation for the fact that the lower aptitude students in the KWL + J condition scored higher than their counterparts in the KWL + S condition is that the more personal writing which occurs in the journal writing provides a stimulus to a higher level of thinking needed for this task. Perhaps the adoption of others' perspectives facilitated the students' ability to think, "What would we need to consider if we were organizing a new country?"

Do the gains in comprehension found in this study outweigh the categorization abilities? Further research is needed to examine the trade-offs. It may be that teachers need to make some pedagogical decisions about their purposes for instruction. Depending on purpose, students may need instruction in both techniques. Another factor that may come into play here is the organization of the materials used. Although prior research reported by Ogle, Jennings, and Carr (1987) took place in intermediate social studies classes, the text used in that study was a geography book. In that study, students were presented geographical features to be studied using the same basic framework. Then similar geographical locations from around the world were compared. Identifying specific categories that will be repeated thoughout a yearlong study provides an excellent study skill for students.

By contrast, the material used in the current study was a history book in which historical events were presented primarily in a sequential narrative. Not only is it possible that this presentation of material may not lend itself as readily to categorization, perhaps there is not as strong a need for categorizing sequential material. The higher scores obtained by the KWL + J group on the comprehension measures other than the Category Expectations task indicate that this ability to categorize does not aid in the comprehension of this particular material. Maybe it is more useful in subject areas such as science or geography in which one topic of study is compared or contrasted to others. Certainly, further research would be helpful in exploring when such a strategy is helpful.

Class Differences Within Strategies

The results of the current study indicate that the KWL + strategies were more effective than the traditional strategies employed by the teachers of the two classrooms comprising the Control Group and that overall the KWL + J strategy was more effective than the KWL + S strategy. However, there were also differences apparent among the treatment groups. Of the two KWL + S classrooms, Classrooms 3 and 4, Classroom 4 produced dramatically more successful results than did Classroom 3. Of the two KWL + J classrooms, Classrooms 5 and 6, both performed reasonably well. Classroom 6 did exhibit higher gains than did Classroom 5, except on the Category Expectations task. What did Classrooms 4 and 6 provide that facilitated these more favorable results? By examining the characteristics of the classrooms participating in this study and determining which of those characteristics may be related to greater performance by students and teachers, we can construct a model of the instructional environment in which such an interactive strategy can flourish.

The four treatment classrooms differed in several characteristics, such as instructional environment, management of reading assignments, instructional approaches, level of interaction, proportions of interactions related to instruction, and presentation of writing.

Implications for Instruction

The context in which the KWL interactive strategy seems to thrive provides for a combination of whole-group and small-group instruction. In addition, purposes set for the small groups are important. An atmosphere of cooperation should provide students with the incentive to meet with their small groups to organize content to share with the whole group. A cooperative atmosphere is established when the teacher maintains the role of evaluator, allowing few student evaluations. Those teachers who frequently referred disagreements to the small groups for resolution experienced less success in learning outcomes. Perhaps those classrooms that permitted frequent student evaluations decreased the comfort level for students to take risks and share ideas. In my observations of these classrooms, there was certainly a perceived competitiveness present in Classrooms 3 and 5, which also had higher proportions of student evaluations. The independent readers who categorized the transcripts commented that the students in these classes seemed to be vying for the teachers' attention or approval. A willingness to take risks is crucial to the success of an interactive strategy such as KWL. The results of this study indicate that students should be encouraged to respond to each other, but those responses should not be evaluative in nature. Although students' assuming responsibility would appear to be a desirable characteristic in an interactive model of instruction, these results indicate that there are some responsibilities best left to the teacher rather than relinquished to students. Further, evaluation seems to be most effective when addressed to individuals rather than groups.

New content should be introduced with a balanced amount of *related content* and *experiences* to help students link the *new content* to their prior knowledge. As instruction progresses through the cycle, those teachers who were most effective in this study shifted the emphasis from review to relating new content to personal experiences. Thus, interactions which focus upon prior knowledge occur throughout the instructional cycle, but the kinds of prior knowledge tapped are altered.

Material should be presented in segments which provide several related ideas so that students can identify the most important concepts and those ideas which support those concepts. Those teachers who assigned paragraph-by-paragraph reading violated the strategy by having students focus on a greater number of ideas within a lesson, but not necessarily the major ideas presented in the context of the complete section of text. Those teachers who utilized the structure of the text to determine segmentation points experienced greater learning outcomes. By setting artificial limits upon students' reading assignments, perhaps the teachers in Classrooms 3 and 5 disrupted the authors' presentation of key points and denied their students the opportunity to experience the cohesion of a complete presentation.

In addition, this strategy utilizes silent rather than oral reading. Researchers in reading have long espoused silent reading of new material. Yet, just as was observed in Classroom 3 in this study, teachers continue to use "Round Robin Reading." Students indicated in their interviews that they "tuned out" when their classmates were reading orally. Certainly, the results of this study indicate that the classes of those teachers who assigned students to read material silently and who used connected paragraphs of text organized into sections designated in the text rather than individual paragraphs showed greater gains in comprehension. When asked about instructional practices, teachers repeatedly justify "Round Robin Reading" as a technique for conveying information to those students who cannot read the text or as a way of "checking to make sure they're reading." Even those current in reading methodology with a repertory of techniques available to them seem to continue to rely on this method of text presentation. This is one area in which new information has not replaced previously constructed schemata.

Another question of interest to educators is how much emphasis should be placed on the strategy itself? And, what aspects of the strategy should be considered? Is it more effective for teachers to focus attention on the procedures comprising the strategy, or to provide practice in its implementation, or to discuss the metacognitive aspects of its components? The analysis of interactions revolving around instruction in this study indicated that the teachers who provided modeling and guided practice of the strategy were more effective than those who talked about the procedures comprising the strategy. Although the interactions that focused on the metacognitive aspects of the strategy were extremely limited in these classrooms, it is interesting to note that the two teachers who included any discussion of these aspects of the strategy were the two whose students achieved better results in each of the treatment conditions. Although we cannot draw any definitive conclusions from such limited evidence, this aspect does open a door for further exploration. Is it possible that rather than extensive explanations of why they are being asked to perform specific tasks students only need to see that the tasks have specific functions and to be made aware of how these tasks can be helpful to them? Or, is it possible that greater emphasis upon this aspect would result in even greater gains?

Students need time to discuss and rank ideas for importance. Categorization and organization of ideas presented needs to be guided by teachers. Assigning the semantic maps to be constructed with partners affords students the opportunity to verbalize the information they deem important and to receive feedback in a nonjudgmental format as they support each other in synthesizing the information presented. Subsequently sharing these ideas in the whole group and organizing a group map provides confirmation of the pairs' decisions or allows for revision of the framework for writing prior to completing the final phase of internalizing the information. This sharing affords students the opportunity to "clean up" the information before it is formally assimilated into their schemata through the final stages of the writing process.

Students not only need time to write about the content, but also to share their writing with partners or small groups and respond to the content of that writing. Using the whole group as a forum for sharing as implemented in Classrooms 3 and 5 did not seem to be as effective. Perhaps sharing in the small groups as implemented in Classrooms 4 and 6 provided students the opportunity to respond to the content of the writing rather than judging the presentation. Comparison of sharing techniques would provide another interesting line of continued research.

Finally, students should be encouraged to work together for the common goal of preparing information and making a valuable contribution to the class, rather than to be judgmental of one another. In this kind of classroom, learning can truly be interactive. In such a supportive atmosphere, students feel comfortable to share their ideas and take the risks of making predictions. In an interactive model of comprehension, these components are essential. When this interactive model is presented within the context of a cooperative learning environment, students can provide support to their classmates, and learning can be enhanced for all the members of the learning community, teachers as well as students.

Conclusions

In conclusion, the results of this study substantiate the effectiveness of the KWL + interactive comprehension strategy as implemented in fifth-grade social studies classes. Classes that implemented the KWL + strategy experienced significantly better learning outcomes than did the control classes.

This study carried the comparison of this interactive strategy to another dimension by incorporating two writing components into the KWL strategy. Just as the more student-centered comprehension approach surpassed the text-oriented traditional approaches used in the control classes, so the more personalized approach to writing surpassed the more factual approach. However, Classroom 4, which implemented the KWL strategy with summary writing, showed excellent results. The class differences that occurred within this study indicate a need for further research in this area.

The instructional differences described earlier indicate that there are specific characteristics that provide support for an interactive strategy to flourish. These include a cooperative rather than competitive atmosphere, varied instructional approaches, balance between prior knowledge and new content, opportunities for students to relate new information to personal experiences, and individual feedback.

Although there were no significant differences between the two treatment conditions for aptitude, the KWL + J condition did seem to have some properties that provided additional support to lower aptitude students. The limitations of this study do not allow speculations about whether the peer support inherent in the KWL model or the more personal approach of the journal writing resulted in better performance on the comprehension measures used in this study.

However, it is possible to conclude that the KWL strategy, with its student-centered approach provides a strong scaffolding for students as they attempt to build bridges between their prior knowledge and new information. Further, the opportunity to reflect upon this new learning and make connections on a personal level, as provided in journal writing, enhances this process significantly. Finally, when these opportunities are presented in a warm cooperative atmosphere, learning can become a collaborative experience shared b[illegible]achers and students.

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ACADEMIC LIBRARIES AND RESEARCH IN THE TEACHING OF ENGLISH*

Michael L. Kamil
Ohio State University

Timothy Shanahan
University of Illinois at Chicago

Academic fields such as medicine and mathematics have adopted standards for research libraries in their professions. Such standards are used to increase the possibility that research will account for recent findings in an area, to assure high quality training and certification, and to assist librarians in developing collections and services in a supportive manner. The field of English Education, including particularly the topical areas of literacy and literacy development, has formulated no such standards. (Note that we use the term English Education to denote all forms of literacy education, including reading and writing at all grade levels.) In fact, the role of academic libraries in research productivity and academic preparation in English Education is uncertain, as no studies exist, at least of recent origin, of the relationship of library quality and research output in this field. Without a clear understanding of the role of libraries in research, the formulation of any standards would necessarily be arbitrary.

Historically, scholars in the various academic fields acted as bibliographers for the libraries in their disciplines. This role has diminished since World War II, however. The reasons for this decline in involvement have likely been threefold. First, the so-called "knowledge explosion" has made it difficult for anyone to have a complete understanding of the publications and availability of materials in a given discipline. Second, researchers have become increasingly specialized and narrow in focus, making their individual roles in library development less comprehensive. Third, the professionalization of academic librarians has made them less reliant on those whom they serve. Nevertheless, evidence suggests that the involvement of scholars from a discipline can lead to the establishment of more useful collections.

Unfortunately, English Education, unlike at least some disciplines, has had no organized effort towards library resources (with the exception of the profession's involvement in the creation of the Educational Resources Information Center in the 1960s). None of the major professional organizations in the field (i.e., International

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Reading Association, National Conference on Research in English, National Council of Teachers of English, National Reading Conference), nor our related educational organizations (i.e., American Educational Research Association), have even established a committee that regularly monitors and informs academic libraries about needs or developments in our research field. Professional training and certification standards are few, and those that do exist either neglect the role of the library in training and development or employ general library standards that have no specific import with regard to English Education. Thus, in a field devoted to the study of how we learn to use written and printed information, there has been almost no attention to the value of our own use of such information or to our needs for it.

Individuals at our various institutions do, of course, make individual requests for books and serials or for particular information services. Some graduate programs might even monitor library quality at their institutions, though we are less certain of this. Such actions, no matter how idiosyncratic, are laudable. They represent a clear belief in the value of libraries to the research and teaching activities of our field and a commitment to assuring that the information needed for such efforts is available.

PURPOSE

The purpose of this report is to make an initial attempt at describing the relationship between library quality and research productivity in the area of English Education. Because these studies are quite extensive and involved, this paper will serve as no more than a summary of this work. The work will be presented in its entirety in a monograph to be published by the National Conference on Research in English. Necessarily, to accomplish this purpose, we conducted two research studies: one to identify institutions that have demonstrated high research productivity in English Education and the other to examine the libraries of these institutions. This report will analyze library collections, budgets, and services from a set of universities selected on the basis of their productivity in the areas of reading and writing-language-literature research. Comparisons of the indices used to analyze these libraries will be made with those collected from a randomly selected group of libraries which represent institutions that have been less productive in reading and writing research. These comparisons will provide an objective analysis of the contribution of academic libraries to the research endeavor in the field of English Education.

Like any study that attempts to characterize quality or value objectively, this effort will be open to the challenge of redefinition and reanalysis. The purpose of this initial effort, however, is not to provide a final answer with regard to research productivity or library contributions to scholarly output. Instead, we hope to invigorate a debate about the importance of library collections to our field of study and a renewed commitment to the creation and maintenance of library collections that will fulfill our present and future information needs in the study of literacy. We believe such a commitment to be a necessary though insufficient, condition for assuring the future intellectual vitality of our profession. It seems to us, given the current budgetary limitations on academic libraries and the increasing costs and proliferating demands on library resources by various disciplines, to be a particularly propitious time for such an analysis and re-dedication.

STUDY ONE: RESEARCH PRODUCTIVITY

The first of these studies is a productivity analysis of universities with programs in English Education. Although there have been some attempts at analyzing the productivity of institutions with reading programs, these studies have had no clear purpose and their designs only permitted a single aspect of productivity to be evaluated. More serious, for our purposes, is that such studies have only considered reading, and the issues of English Education are broader than this (as are those of literacy).

Method

Sample. To demonstrate the relationship between institutional research productivity and various indices of library quality, it is necessary to operationally define *productivity*. There are, of course, many scales that can be used for estimating productivity, including numbers of publications, ratio of publications to number of faculty members, number of advanced graduate students, grant dollars, presentations at professional conferences, citation rates, and similar measures.

For the purposes of this study, productivity was measured separately in reading and writing-language-literature, as each of these areas of English Education has historically generated its own journals, professional organizations, scholarly books, and graduate training programs. Two independent measures of research activity each in reading and writing-language-literature were developed. Institutions were rank ordered according to (a) number of doctoral degrees awarded in reading (a rank ordering based on a count of all Ph.D. and Ed.D. degrees in reading awarded by American universities and colleges from 1983–1985), (b) number of doctoral degrees awarded in writing-language-literature (a rank ordering based on a count of all Ph.D. and Ed.D. degrees in writing awarded by American universities and colleges from 1983 to 1985), (c) number of research publications in reading (total reading research publications in journals and books tallied by institutional affiliation listed with the publication), and (d) number of research publications in writing-language-literature (total writing research publications in journals and books tallied by institutional affiliation listed with the publication). These indices were compiled for 385 institutions on the basis of reading publications, 167 on the basis of doctoral degrees in reading, 312 on the basis of writing-language-literature publications, and 158 on the basis of doctoral degrees in writing-language-literature. The 25 most productive institutions in each of the four rankings were selected to represent the highly productive institutions.

This selection process resulted in the identification of 49 highly productive institutions in the area of English Education. Four of these universities appeared in all four of the most productive lists. Twelve institutions were included in three of the lists, and another 12 appeared in two of them. The remaining 21 institutions were included in only one of the productivity ratings.

An additional 48 institutions were selected to serve as a control group. Twelve universities were randomly selected from the remaining institutions in each of the four productivity lists. That is, 12 of the remaining 360 institutions that had accounted for publications in the area of reading were selected. If upon selection it was found that an institution had been included in the top 25 of one of the other categorical lists, an additional institution was selected to take its place in the control set. The same process was used if an institution was already included in one of the other control lists. This selection process resulted in the identification of 48 institutions that had demonstrated at least some productivity in one or more of the four indices used in this study. However, these institutions generated less productivity in the relevant categories than had those included in the most productive sets of universities.

STUDY TWO: LIBRARY CHARACTERISTICS

A survey was designed that asked about the characteristics of library holdings in general and English Education libraries in particular. The survey was also designed to provide information about specific holdings in English Education as well.

Of the 97 institutions that were contacted, 60 responded with useful data, a response rate of 62%. Although this response rate is not especially high, it is well within the bounds of common response rates when a great deal of information is required by respondents. Sixty-seven percent of the most productive schools ($n = 33$) and 56% of the control group institutions ($n = 27$) responded. These response rates suggest that institutions in the most productive category had a slightly higher possibility of replying. This is probably due to the fact that more personnel and resources are available for English Education library services at the highly productive institutions. A list of the responding institutions is included in Table 1. All analyses are based upon the responses provided by these institutions.

The survey responses from the 60 universities were tabulated and were subjected to a number of analyses. Since we were interested in the question of whether the library holdings influenced the productivity of the universities, each university was assigned a research productivity rank from 0 to 4. This rank represents the number of productivity lists on which the university appeared. Table 2 gives the correlations of various library characteristics with the research productivity rank. Since not every library responded to every question, the number of respondents is given in parentheses. The size of the library as well as the budget is correlated with research productivity in English Education. All of the general questions about library size, budget and activity yielded significant correlations with research productivity. All but one question about the English Education collection resulted in insignificant correlations.

To determine the relative contribution of library size and budget on research productivity, several regression analyses were conducted. In the first, a forward stepwise regression was conducted with general library characteristics as the independent variables and research productivity rank as the dependent variable. This was done first because many of the libraries surveyed could not separate their English Education collection from the general collection. Total operating expenses yielded a multiple R of .50 ($R^2 = .25$). The addition of size of library (in volumes) stepped in second,

Table 1

Universities Participating in the Library Study

*Arizona State University
Bowling Green State University
*Brigham Young University
California State University–San Bernardino
Carnegie Mellon University
Clark University
Cleveland State University
College of William and Mary
*Columbia University
Drake University
Duke University
*East Texas State University at Texarkana
Eastern Connecticut State University
Frostburg State University
Gonzaga University
*Harvard University
*Hofstra University
Howard University
Illinois State University
*Indiana University (Bloomington Campus)
*Kent State University
Louisiana State University–Shreveport
Massachusetts Institute of Technology
Miami University
*Michigan State University
*Michigan Technological University
*New York University
Northeastern Illinois University
Northern Arizona University
*Northern Illinois University
Oklahama State University
*Rutgers–The State University
*San Diego State University
*San Francisco State University
*State University of New York–Albany
Syracuse University
*Temple University
*The Ohio State University
*University of Alabama
*University of Arizona
*University of Florida
*University of Hawaii
*University of Illinois at Urbana–Champaign
*University of Iowa
*University of Kentucky
*University of Maryland
*University of Minnesota
University of Nevada–Las Vegas
*University of New Hampshire
University of North Carolina at Asheville
University of North Colorado
University of Northern Iowa
*University of Pennsylvania
*University of Pittsburgh
*University of Southern California
*University of Texas at Austin
University of Utah
*University of Washington
University of Wisconsin–Milwaukee
Vanderbilt University–Peabody College

*Universities selected on the basis of productivity; all others randomly selected as controls.

producing a multiple R of .55, ($R^2 = .30$), $F(1, 28) = 23.61$, $p < .0001$. The means and standard deviations of all of the significant variables in this and subsequent analyses are given in Table 3.

A second regression was done, similar to the first, but with the addition of the variables related to the Education and English Education Collections. In this case, the number of volumes in the Education Collection stepped in first, yielding a multiple R of .68 ($R^2 = .46$). Number of microform holdings entered second, yielding a multiple R of .77 ($R^2 = .59$), $F(2, 27) = 19.59$, $p < .0001$.

In an attempt to separate the effects of size of libraries and size of budget, another forward stepwise regression was performed with size of library stepped in first. A multiple R of .45 ($R^2 = .21$) ($F(1, 28) = 7.28$, $p = .02$) was obtained. On step two, volumes in the Education collection boosted the multiple R to .73 ($R^2 = .54$), F(2,

Table 2

Correlation of Library Variables with Research Productivity Rank

Library size (volumes)	.4461*	(60)
Number of current serials	.4294*	(59)
Number of microform holdings	.4571**	(58)
Budget for materials acquisition	.4710**	(59)
Budget for salaries	.3206*	(59)
Total operating expenses	.4874*	(58)
Number of items borrowed from other libraries	.3369*	(58)
Number of items loaned to other libraries	.4156*	(58)
Number of volumes in Education Collection	.5263*	(53)
Number of volumes in English Education Collection	.4070*	(40)
Number of serials in Education Collection	.1513	(58)
Number of serials in English Education Collection	.1906	(40)
Expenditures for materials in Education	.2097	(57)
Expenditures for materials in English Education	.1784	(33)
Expenditures for faculty and staff in Education	−.1300	(40)
Expenditures for faculty and staff in English Education	.2314	(31)

Note. 1-tailed significance: * = .01. ** = .001. Number of cases in parentheses.

27) = 15.68, $p < .0001$. Number of microform holdings, number of current serials, expenditures on materials for the Education Collection, and budget for general library acquisition of materials also contributed smaller but significant increases in the multiple R. With all variables entered the multiple $R = .92$ ($R^2 = .84$), $F(6, 23) = 20.18$, $p < .0001$.

The final regression stepped in total operating expenses first, producing a multiple R of .48 ($R^2 = .23$), $F(1, 28) = 8.45$, $p = .01$. Volumes in the Education Collection stepped in second, raising the multiple R to .71 ($R^2 = .51$) ($F(2, 27) = 14.07$, $p = .001$). In addition, number of microform holdings, size of library, number of current serials, expenditures for materials in education, and budget for general acquisition of materials contributed to a final multiple $R = .92$ ($R^2 = .84$), $F(7, 22) = 16.69$, $p < .0001$.

These results suggest that neither budget nor size of library *alone* account for the variance in research productivity ranks. They also suggest that serials and expenditures for materials also contribute to the predictability of research productivity. Perhaps the potency of the general library and general education variables can be traced to the fact that many of the libraries surveyed could not separate their English Education Collections from their general Education Collections.

DISCUSSION

This preliminary work seeks to determine what characteristics of research libraries predict literacy research productivity. Prior to this research, we had no way of determining what characteristics of research libraries in general, and English Education libraries specifically, were optimal to foster research productivity. The eventual pur-

Table 3

Means (and Standard Deviations) for Variables in Regression Analyses

Research Productivity Rank	Size of Library (in Volumes)	Total Operating Expenses (in Dollars)	Number of Microform Holdings	Volumes in Education Collection	Number of Current Serials	Expend. Materials Education	Total Budget Materials
Control	1,192,527 (1,963,972) (*N* = 26)	4,100,916 (3,847,842) (*N* = 26)	944,970 (935,250) (*N* = 26)	35,046 (42,823) (*N* = 24)	9,202 (8,500) (*N* = 26)	28,932 (24,388) (*N* = 25)	1,896,653 (1,518,741) (*N* = 26)
1	1,630,735 (1,331,406) (*N* = 13)	4,018,936 (3,863,940) (*N* = 13)	1,257,514 (956,382) (*N* = 12)	45,529 (44,653) (*N* = 12)	9,556 (10,911) (*N* = 13)	23,262 (33,229) (*N* = 12)	2,002,115 (1,676,489) (*N* = 13)
2	3,240,536 (3,452,257) (*N* = 9)	7,460,782 (4,287,025) (*N* = 9)	1,838,953 (1,305,655) (*N* = 9)	65,685 (52,488) (*N* = 8)	17,781 (14,051) (*N* = 9)	53,727 (29,537) (*N* = 9)	4,897,556 (6,974,908) (*N* = 9)
3	2,283,262 (1,222,087) (*N* = 8)	8,760,329 (4,988,825) (*N* = 7)	2,125,368 (1,202,619) (*N* = 8)	135,711 (130,464) (*N* = 7)	20,002 (9,966) (*N* = 8)	19,004 (16,427) (*N* = 7)	3,785,634 (2,478,591) (*N* = 8)
4	4,544,505 (2,516,887) (*N* = 4)	12,282,205 (4,280,014) (*N* = 3)	2,368,688 (596,959) (*N* = 4)	292,873 (301,047) (*N* = 2)	38,140 (48,488) (*N* = 3)	65,066 (51,444) (*N* = 4)	4,928,399 (2,553,754) (*N* = 3)
Overall	1,963,570 (1,963,973) (*N* = 60)	5,589,413 (4,604,068) (*N* = 58)	1,401,486 (1,114,816) (*N* = 59)	65,069 (92,100) (*N* = 53)	13,524 (15,097) (*N* = 59)	32,970 (31,013) (*N* = 57)	2,787,945 (3,288,113) (*N* = 60)

pose of this line of research is to determine what sorts of volumes, serials and services should be collected in a research library. We suggest that this be based on those sorts of library materials and holdings that best facilitate literacy research. In a time of fiscal retrenchment, this is a particularly urgent issue as librarians begin to make decisions about holdings without regard to scholarly relevance (University of Minnesota Libraries, 1990). The intent of the present study, however, is not to prescribe the list of materials to be collected. It is designed, rather, to open discussions on how the specification of such a list can best be accomplished.

What is impressive about these data is that literacy research productivity can be predicted by such seemingly simple variables as size of library and total operating expenses for the library. It is also comforting to note that a more obviously relevant variable—volumes in the Education Collection—also has a strong predictive value. These data are also instructive in that they point the way to determining specific holdings that should be collected for a research library. (This can be done by looking at the specific holdings queried on the survey and performing much the same kind of analysis on individual titles and holdings. These data will be published in a monograph from the National Conference on Research in English.) We cannot, however, sort out the effects of general budget from research budget in our data. We are pursuing that issue in a separate study. At a time when librarians are making decisions about what sorts of materials will be collected, these kinds of data are critical. The conclusion is simple: research productivity is clearly related to appropriate library collections.

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NOW THAT LITERACY HAPPENS IN CONTEXTS, HOW DO WE KNOW IF THE CONTEXTS ARE AUTHENTIC?

Jamie Myers
Pennsylvania State University

In our zeal to establish the best theories about language, literacy, learning, and instruction, we have inadvertently become apolitical. We become absorbed in theoretical debates about which particular set of instructional methods are superior (Carbo, 1988; Chall, 1989; Taylor, 1989; Weaver & Groff, 1989), without explicating how different instructional experiences define knowledge and distribute control in the social structure in and out of school. In debates about educational research—the so-called "paradigm wars"—researchers profess the superiority of their particular inquiry perspective to establish the best theories about literacy and instructional practices (Stanovich, 1990), without explicating how different research experiences constitute relationships of power and authorize understanding between the researcher and the researched. And, especially in the calls for ending the paradigm wars to collaborate in an improved science of literacy based upon the synthesis of findings from different research perspectives (Edelsky, 1990; McKenna, Robinson, & Miller, 1990; Smith & Heshusius, 1986), we tend to ignore the political consequences of specific instructional and research practices. In each of these instances, the debates are carried out in the name of theory—which acts best fit and refine generalizable theories about language learning, literacy use, and instructional practice. So, when we make recommendations about instructional practice in literacy and support the practice on theoretical grounds, we are pushed into endless, even circular, theoretical debates that rarely examine the societal purposes and political consequences promoted by our theories.

For example, consider the move to contextualize literacy events to classify them as authentic and artificial. Defining literacy as the interaction among a reader, a text, and a context (Wixson & Peters, 1984) leads researchers and teachers to be concerned about the situations in which readers encounter texts. Since the situation constitutes a context for literate actions, theory which focuses narrowly upon the characteristics of the reader or writer, or the text, in isolation from the situations in which people use texts cannot fully inform instructional practice (Lipson & Wixson, 1986). This would seem to be a giant theoretical leap forward in the pursuit of a more sophisticated understanding of literacy; however, some literacy researchers have questioned whether all situations of text use are genuine acts of reading and writing (Edelsky & Draper, 1989). They suggest that in some situations, especially in schools, students might be engaged in a type of literacy which, as simulated practice, has little inherent meaning; therefore, although it is literacy, it is not reading or writing. Workbook exercises are often a target of this claim. A comparable event is the feeling that we all have as teachers when we wonder if our students are really engaged in their reading and writing assignments or if they are just displaying the correct forms, going through the motions of a kind of "procedural display" (Puro & Bloome, 1987); this too would be an example of literacy, but not real reading and writing because the students are not fully engaged in a meaning producing event. Often these school reading and writing events are labeled "decontextualized" because they involve a context of skill practice, instead of a context where meaning construction is central. But now that every reading and writing event is contextualized, how do we decide if the event is artificial or authentic, meaningless or meaningful?

It seems that we appeal to our language, literacy, and learning theories. First, we make the literacy event problematic (even if the students do not have a problem with doing the reading or writing). Then, we might focus upon the materials and from a psycholinguistic perspective suggest that the view of language and learning that led to a text used in literacy instruction reduces reading to the fragmented practice of only one cuing system at a time (Edelsky & Draper, 1989; Goodman, Watson, & Burke, 1987); this clearly makes the literacy event artificial. Or, we might focus upon the given task and from a sociolinguistic perspective discuss the essential component of pragmatics which is missing and prevents the students from contextualizing the text in some everyday life experience (Harste, Woodward, & Burke, 1984); again, this clearly makes the literacy event artificial. Still, we might also focus upon the reader and from a psychological perspective describe the metacognitive procedural and conditional knowledge which would help the reader be aware of a lack of engagement and use strategies to figure out what action is needed to make the text more meaningful (Paris & Jacobs, 1984); this accepts the literacy event as authentic.

Each of these attempts to construct a set of theoretical criteria that establishes the authenticity or artificiality of a literacy event is based upon a match between the literacy event in question and the generalized theories of language use and human learning which in their current state represent the highest forms of genuine language and learning. We rarely articulate first and foremost how knowledge is defined and power is distributed in the literacy event. Clearly, we allow our theorizing to push us into apolitical stances where we debate the authenticity of literacy instruction as a kind of correspondence to theoretical truth and ignore the sociopolitical consequences of the forms of literacy authorized in schools and society (Shannon, 1985).

I think that maybe the reason we avoid the political focus is that we are vastly outnumbered (especially by the students themselves); that, in fact, these reading and writing events we quickly call meaningless, decontextualized, artificial simulations are actually very authentic—there is a purpose in them, they do function, they are pragmatic, they do have meaning. Each use of literacy in society and school is a distinct ideological practice which is culturally learned through participation and social interaction with others engaged in the same use of literacy (Cook-Gumprez, 1986; Heath, 1983; Scribner & Cole, 1981). Literacy can no longer be characterized as a unitary autonomous ability of which someone can have so much or too little; nor can it be viewed as a contextualized practice which to a degree matches an autonomous theoretical ideal literacy. The important distinction here is between autonomous literacy theory and ideological literacy theory (Street, 1984). No literacy event then is either artificial or neutral. It happens. People do it. Even to say it is artificial on language theoretical grounds would deny the particular theory of language itself used to make that claim, because the language theory would not then include all uses of literacy.

We may disagree with some literacy practices, especially school literacy practices, and we may have good reasons to disagree, but defining any as artificial brings into question itself the definition used to support others as authentic—and this launches different parties into the never-ending debate of "No, it isn't," "Yes, it is," "Na huh," "Ya huh." No, our disagreement is not with the school literacy practices themselves as theoretical language events, even though that is what we often argue; our disagreement is with the larger societal structures which validly contextualize each school literacy practice that flourishes. And this very political act of validation is always undertaken in the guise of what we best know about language, literacy, learning, and instruction—our apolitical, autonomous theories.

Recently we see calls from language researchers to build a better theory of literacy instruction by comparing the effects of whole language methods to more traditional direct instruction-transfer methods (McKenna et al., 1990). We hear conversations all the time, and jump in ourselves with our own advice, about such and such a technique or procedure which will make better writers, readers, learners, and even teachers. Our facts about what would be the best experiences with print for developing or supporting children's and adults' literacy learning are embedded in our autonomous theories about learning and language. So, we often debate our theories about how learning happens, what is the essence of language, and what are the stages of literacy development. Why are we so ready to enter into the theoretical fray to debate autonomous models, yet so reluctant to enter into the political fray and debate ideological values?

Perhaps we get so wrapped up in the debates on methods, theories, and paradigms, we continually fail to see that literacy is happening all around us without our doing.We build theories, debunk theories, and refine theories so often that it is even hard to think of a time or a reason for literacy to happen just because it happens, and not because it is one of the building blocks in an instructional sequence needed to achieve the end goals of our theories. When we cannot stand each other's theories about literacy and learning we shift into paradigm incompatibility—it is bigger than just our individual theory, no, no, it goes far beyond just my thinking—it has some cosmic connection to a grand theory of theories which explains our epoch—possibly the universe. Or, we call to arm—to end the paradigm wars, to collaborate on a great crusade, to use our different theories, not as rivals, but as separate mirrors in a giant telescope through which we can peer even deeper and deeper into the truth of literacy. If one of our mirrors is flawed, is the whole thing out of focus? (O, visions of Hubble).

Perhaps we are too focused upon what we can do to people to make them more literate. One researcher sees a literacy event as authentic for students to do, another sees a need to prepare students in the literacy forms needed for success in society—but both, and all of us, maybe not all the time, slip into this deterministic perspective where we do things to students to make/help them become literate. Is helping students an authentic act? Sure it is authentic, but it is political too! People help each other all the time—and in all kinds of ways we show people and ask to be shown how to do things. It makes us feel good when someone accomplishes something (literate or not) with our help. It seems to be an automatic stance of teachers of literacy, a kind of "instructional philanthropy" (Kameenui & Shannon, 1988), to abstract from experience the correct steps and forms used to achieve a literate product, then turn around and teach those steps and forms to the unable, less fortunate student so he or she can reproduce our successful literate experience.

What we fail to realize in our enthusiasm to help students become more literate is that what the student often experiences is not our original literacy practice at all, but the package of instruction in literacy (that someone else must name the world for them). Long after the lesson's points are forgotten, the package remains as the implict understanding of one's own separated position in relation to knowledge and one's hierarchical position in relation to others of particular class, race, and gender. This is the ideological basis of school literacy practices. This political experience vastly constrains what is possible in future learning and social interaction. The instructional package is authentic all right, but we must stop doing it. We must stop doing things to people for their own good (or for the good of our own theories), then grade them on how well their forms, and functions formalized, meet our autonomous theoretical ideals.

I am not opposed to theoretical thinking or debate, but I suggest that our continued passion in theoretical debates very often leads us to ignore the sociopolitical consequences of language use and literacy instruction in schools and our everyday life. There is little doubt that we are always theorizing in our action and interpretation of others' actions. But the instant we conceptualize—interpret—name something the way we see it and want to do things to make it happen, we must recognize that we are seizing power. I do it all the time with my wife when I say "I know exactly what you mean, dear—you know if you would only . . ." (and just the use of the expression "my wife" seizes power).

I do not want to separate the political from the theoretical, they happen simultaneously. But I feel we too often talk only about the theoretical as idealized truths in our specialized area of literacy interest and ignore the political contexts. If our theories are to become authentic literacy events themselves, then they too must be examined as ideological social practices. What is the purpose of this theory of language learning? What are the political consequences of the instructional packages based upon this theory? What are the social relationships, and how is knowledge distributed in the literacy practices supported by this theory? What is it in the sociopolitical structure that led us to support this theory and not another? What is the ideology of this theory? All literacy is critical, and all theorizing must be critical literacy.

I want us to put foremost the political examination of instructional practices in literacy. It is not enough that we elaborate how a classroom literacy event fits our idealized theory of language learning. We must show how an engagement in literacy creates the best chance for shared power, social relationships of equality, a respect and desire for a diversity of responses, a unity of experience and knowledge, and a chance to negotiate and socially construct meanings for experience. Denny Taylor (1989) does just this when she highlights the child's new importance in evaluating her own literacy during active participation in parent-teacher-student conferences. So, when we advocate that students should generate questions, shape inquiries, and critique knowledge, instead of answer teacher questions, follow directions, and reproduce knowledge, we must explicitly emphasize that in doing so students *can* position themselves differently in the social structures of power and knowledge. Or I want us to say that we want students who just follow directions and comply with authoritative knowledge, not exactly the democratic ideals most schools profess to be developing in students.

Once we begin to articulate the relationship of instructional practice and literacy theory to the social structure and power relations in and out of school, the ideological character of literacy will become apparent, we will be forced to clarify our own political values, and we will begin to settle theoretical debates with ethical and moral criteria. Sure, all literacy practices in school are authentic, but I do not equally value all of them. I think that is what we are all really up to—we are trying to change or maintain the value structure for literacy practices based upon the multitude of school and societal cultures to which we belong. This may be why we gravitate to theoretical warrants, so our political agendas can remain unquestioned, unthreatened, riding just below the surface of the literacy practices we encourage in our classrooms.

But, we are naive if we think we are going to change the broader sociopolitical contexts by only debating the extent to which particular classroom literacy practices are more theoretically true to language learning. Only when we explicate the political consequences of school literacy practices and instructional packages can we begin to deal with the larger social issue of which literacy practices best constitute the ideology of equity, justice, and liberty. This is the issue at the center of the debate over criteria which define literacy events as authentic and artificial. This is the issue that prompts Black educators to question the pursuit of one's own voice when specific forms of literacy are required for economic and political access (Delpit, 1986). This is also the issue highlighted by Andrea Fishman in *Amish Literacy* (1988), where single authoritative meanings for texts are of greatest cultural value. Reading and writing, once contextualized, clearly become an ideological theory of literacy.

I hesitate to suggest that the reason we avoid elaborating the ideological aspects of literacy practices in school instruction is because the sociopolitical structures of the academic world rewards our narrow focus upon autonomous theorizing. We have come to understand how our facts about literacy are theory laden—determined by our theoretical perspective and not objectively true in some ideal autonomous reality (Lincoln & Guba, 1985). I think it is time we come to fully realize that our theories are value laden. When we say that a specific literacy practice is not authentic or is decontextualized, we blind ourselves to the context in which it is meaningfully embedded. In doing so, we ignore the sociopolitical context, almost pretending as if it does not exist in the "decontextualized" practice, and this only moves us farther and farther away from dealing with the issues which can change the sociopolitical contexts that shape and promote the literacy practices which we find unacceptable. It is time to push on to explicit conversations about the democratic values engaged by each literacy practice, even if we must critique the very foundations upon which we have inherited our standing as theoretical experts.

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ALTERNATIVE ASSESSMENTS OF LITERACY: TEACHERS' ACTIONS AND PARENTS' REACTIONS

Elfrieda H. Hiebert, Terry A. Hutchison, and Peggy A. Raines
University of Colorado–Boulder

Recently, calls for alternative assessments have come from both evaluation and curriculum specialists (Shepard, 1988; Valencia, McGinley, & Pearson, 1990). The proposals have included tests with more authentic text (Valencia & Pearson, 1987), portfolios (Wolf, 1989), and performances such as submissions to book fairs or presentations of plays (Wiggins, 1989). Some districts (e.g., Eresh, 1990) and states (e.g., Brewer, 1989) are engaged in pilot testing alternative assessments. To date, however, articles that encourage teachers to collect information far outnumber descriptions of teachers' abilities to integrate alternative assessments into an already full agenda. The first purpose of this project was to describe the use of alternative assessments by teachers in contexts where such are encouraged but not mandated.

The second purpose was to consider parents' views of standardized and alternative assessments. The voices of parents are typically heard *after* school practices change, not as part of the change. Alternative assessments represent a drastic change in the information the public has received over the last several decades about school outcomes. Parents may expect standardized test scores but may not realize that standardized tests do not necessarily provide information on authentic reading and writing use.

The study employed a qualitative methodology, with case studies of two classrooms conducted. As Howe and Eisenhart (1990) note, questions of interest should drive methodologies rather than the methodologies driving the questions. In an initial study on the relatively unexplored topic of alternative assessment, indepth interviews of views and observations of assessment practices related to two classrooms were deemed appropriate.

METHOD

Setting and Participants

Several years ago, the suburban school district that was selected for the project eliminated all standardized testing until the end of third grade. At the urging of teachers who stated that the curriculum no longer reflected classroom experiences, revision of the district curriculum began, a process that was still ongoing during the project. Teachers and principals had considerable autonomy at school sites in designating curriculum and assessment. The school chosen for the project was typical of the district. A "workshop" approach in writing had extended to reading in many classrooms. Teachers and principals (two persons shared the post) had identified alternative assessment as the inservice focus for the school year. Since the two teachers volunteered to participate, they were clearly comfortable with their classroom activities and were viewed by principals as effective teachers. Ms. Clarke (pseudonyms are used throughout), the second-grade teacher, had 5 years of teaching experience, and Ms. McNeil, the fourth-grade teacher, had 2 years of teaching experience.

Six sets of parents were also part of the sample, three with second-grade children and three with fourth-grade children. Teachers ranked students according to literacy accomplishments, and the parents of a child in the top, middle, and bottom third were interviewed and observed in a parent-teacher conference.

Procedures

Audiotaped interviews with teachers centered on the nature of assessment and its relationship to instruction. Questions included, "How do you currently assess student progress in literacy?" and "How do you document the assessments?" The interview was followed by 3 days of observations in each classroom spread over a 3-week period. Observation days were selected with the teachers to represent the range of literacy activities in these classrooms. Observers kept an ongoing record of classroom activities, collected samples that related to assessment, and informally talked to teachers during recess and lunch breaks for clarification when it was needed. Interviewing and observations were conducted by a different researcher (both advanced doctoral students and experienced teachers) in each classroom.

Parent interviews were also audiotaped and conducted at convenient locations and times prior to the parent-teacher conference. The interviews focused on parents' views about standardized tests and alternative assessments, with questions such as "How is your child's progress currently assessed and reported to you?" and "What do these assessments tell you about your child's abilities to read and write?" Parent-teacher conferences occurred during the last month of school and were audiotaped by the observers.

Coding of Information

Data from teacher interviews and classroom observations were analyzed according to two category schemes. The first was Calfee and Hiebert's (1988; 1991) three stages of the instructional-assessment cycle: goals and purposes (identifying uses for information and target literacy goals and describing their manifestations at different points in a school year or school career), data-gathering (collecting information on students' progress toward target literacy goals through a variety of ways, including observations, conferences, and samples of student work), and interpreting information (using data to make instructional and assessment decisions). The data-gathering stage has an analogue in Valencia et al.'s (1990) "mode" (samples, interviews, observations), but the other four dimensions of the Valencia et al. scheme provide a more fine-grained analysis of dimensions of goals and data-gathering and so were also used:

(a) focus (the level of the literacy proficiency), (b) structure (how standardized and specified the assessment is), (c) intrusiveness (a regular classroom or special assessment event), and (d) locus of control (student versus teacher assessment).

Because this project was an initial investigation of teachers' use of alternative assessments and parents' views of assessments, conclusions regarding practices and views were identified through triangulation procedures rather than by quantifying the data. Findings reflect triangulation of data sources from several sources—notes from observations, transcripts from interviews and conferences, and analyses of documents such as student portfolios and teacher assessment forms. Findings also are the result of triangulation among several researchers (a university professor in addition to the two observers) who studied the same data set independently and collectively. Transcripts of teacher and parent interviews and parent-teacher conferences, notes from classroom observations, and samples of assessment forms and student work were analyzed individually by members of the research team. These individual analyses were followed by discussions among research team members in which consensus was reached on a category, such as goal-setting, using conclusions of different researchers and from multiple data sources.

RESULTS

Rationale, Use, and Interpretation of Alternative Assessment

The triangulation process produced quite different scenarios in the second- and fourth-grade classrooms and so are considered separately.

Second-grade. Ms. Clarke was clear about the first stage of assessment—the uses of assessments for instruction. Samples of student work, according to Ms. Clarke, aided in implementing appropriate instruction. For example, a perusal of students' writing folders had shown problems with story structure (an understandable shortcoming with second-grade children) and had led to several lessons on story structure. Ms. Clarke described the link between assessment and instruction: "So, when I get that specific information, either through a conference or reading with them individually or some group work that we do, then I address that in my teaching."

Ms. Clarke used various data-gathering modes. She regularly jotted down comments about students' responses in events such as small conferences in a notebook. Ms. Clarke administered an informal reading inventory (IRI) four times a year and used this information in reorganizing curriculum and instruction. Children participated in the process by maintaining writing portfolios with rough and final drafts of papers and literature logs, where brief entries were made about books. Ms. Clarke gave children checklists for evaluating their own reading and compositions and one another's compositions (e.g., "Did you write about a topic you haven't written about before?").

The interpretation phase of assessment was also clear. The checklists and summary sheets for the IRI allowed aggregation of data. Ms. Clarke did not summarize information from anecdotal records or children's writing or reading folders quantitatively, but she did examine a category such as "chooses appropriate books" over the course of a term, using her notes and children's portfolios and checklists. Ms. Clarke described her use of the information as "Often times, it's right away . . . as soon as I observe something, and other times I need to sort of just take some information about how kids are doing and think about it and figure out what would be best for them to be working on next."

With respect to the dimensions of Valencia et al. (1990), the assessment system was somewhat structured but not intrusive, occurring as part of classroom learning routines. The locus of control did not center in the teacher, since children kept a folder for writing samples and another for brief summaries of the books that they had read. The focus of the assessments was on "large" domains of literacy, such as students' ability to share themes of their books, rather than on smaller domains like knowledge of word endings.

Fourth-grade. Ms. McNeil could point to some of the same data-gathering formats as Ms. Clarke—writing folders, student literature logs, and miscue analyses. Students' entries in literature logs were expected to be extensive, describing primary events from their books, discussing their feelings toward what they had read, and listing new vocabulary and their definitions from the context. Students worked extensively on compositions which were kept in writing portfolios where rough drafts and peer response sheets were stored.

Ms. McNeil saw these instruments for their instructional value (a legitimate function), but the relationship of goal-setting and interpretation to these activities was unarticulated. For example, she would describe the "10 different ways they could respond to the book they were reading" but in her interview Ms. McNeil failed to relate the value of different types of responses in the assessment process. When she responded to selected final drafts of students (which she did frequently), she did not study rough drafts or peer response sheets. While she commented on papers, there was no record of students' progress on particular domains of writing such as structure of compositions or quality of message from grading period to grading period.

Portfolios were in place in Ms. McNeil's classroom, but she had not made connections between the instructional activities and assessment. Ms. McNeil saw the process as one of keeping more records and at one point in the interview stated, "I need to keep better anecdotal records on those little things which I don't really do right now, but I know I should." Her equation of the anecdotal records with "little things" may have been telling because later in the interview she questioned the value of keeping records:

> It's just that I keep a lot in my head and I do a lot intuitively . . . translating that into paperwork is difficult, and I realize that if something were to ever happen to me there would have to be some records available, or maybe there really wouldn't. I guess this is just elementary school and someone else could do some of the same work assessing things that I can do, but that's the area where I really need the most work.

This statement suggests that Ms. McNeil saw assessment disassociated from clarifying goals and students' instructional experiences. Record-keeping was something that "should be done." Why it should be done was less clear.

Parents' Perceptions of Assessment and Teachers' Communication with Parents

Questions about the functions of standardized tests showed grade-level differences in parents. Parents of second graders indicated that standardized tests gave them little specific or understandable information about their child that was useful. As one parent stated, "I'm not sure [that standardized tests are useful] other than what you see in the media in terms of trying to compare schools, school districts as a whole, and how their whole student body is performing against the rest of the country or state or nation." Since their children would not be tested until third grade, parents of second-grade students were speaking about tests from their own experiences or those of older children, not necessarily grounded in the experiences of the target child.

Parents of fourth graders who had seen their children's test scores as third graders expressed a similar sentiment about the value of standardized tests for understanding their children's learning. However, these parents clearly stated reservations about efforts to eliminate standardized tests. This should only happen, according to them, if their children would not be assessed by standardized tests later as in college entrance exams. If standardized tests were going to be important down the line, children should learn to take and be evaluated by standardized tests.

Alternative assessments, as viewed by parents of second graders, were the report card, "Friday folder" (a collection of work sent home weekly), and parent-teacher conferences. One parent remarked that the general comments such as "Brittany is doing good work!" that the teacher typically wrote on the Friday folder made it unclear how the child was progressing, but another parent spoke of the benefits of comparing work over time. In general, report cards on which teachers circled categories and wrote cryptic notes were seen as vague, confusing, and not particularly helpful. As one parent stated, "It's kind of hard to have much perspective on the report cards, what the grades mean. I think that when those are coupled with teacher conferences you get a little bit of information." Parents of fourth graders responded somewhat differently to questions about alternative assessments. When asked about the source of information about their children's progress, parents of fourth graders referred to report cards as their primary source of information. Little mention was made of alternative assessment measures such as the writing portfolios in which students worked daily and which were shared in parent-teacher conferences.

Parents had been selected so that they represented children with a range of achievement levels. The sample, of course, was small, which may explain a failure to establish any clear patterns at either grade level related to children's achievement. Interviewers never asked parents specifically about their children's achievement, but no parents expressed concern about their children's performances. One parent did comment that tests could be helpful in "understanding that they're not good at some things and knowing, perhaps, that you have to be more patient or more helpful."

The content of the parent-teacher conferences in the second-grade classroom centered around the samples of student work and literacy processes (as evident in the checklists). Ms. Clarke began the conference by explaining the kinds of tools that she had used to draw conclusions about the child's progress. She then showed samples that illustrated the conclusions. For example, if a child had made considerable progress in reading, moving from simple text to chapter books, she used her notes and the child's literature log to illustrate this progress.

Similarly, the fourth-grade teacher had gathered samples of student work for parent-teacher conferences, but these were presented with a general stance rather than with specific goals in mind. Parents were asked to "see the difference" from a paper written at one point in time to another. Whereas the second-grade teacher pointed to a feature of children's writing such as the ability to develop a storyline, Ms. McNeil's typical stance was "I've brought her writing folder here and I think you can see a lot of growth in her writing as well." Asking parents to make such analyses can assist in engaging them in reflecting on their children's work. However, unlike Ms. Clarke, who followed up such a request with a discussion of specific features of writing or reading that had been the focus of classroom instruction, Ms. McNeil did not give parents reference points for analyzing their children's progress.

DISCUSSION

A one-time visitor to the classrooms of Ms. Clarke and Ms. McNeil may have left with the impression that both were doing very similar things. Both teachers used a writer's and reader's workshop approach, where students kept folders or portfolios with their rough and final drafts of compositions and summaries of books that they had read. The instructional activities in the two classrooms provided similar opportunities for assessment. The use of these data, however, differed substantially across the second- and fourth-grade teachers. The second-grade teacher studied material in the portfolios with an eye for particular dimensions of growth, such as development of story structure, while the fourth-grade teacher responded to material in the portfolios for immediate instructional purposes. That is, Ms. McNeil seemed more concerned that students had completed the assignments than the nature of growth (or lack thereof) evident in their assignments. Portfolios, of course, can be used for this purpose, but Ms. McNeil was less clear of how assessment might go hand-in-hand with an instructional focus

The difference in parents' responses about standardized tests as a function of children's grade level suggests an explanation that goes beyond individual teachers to the larger culture of schooling. As most school systems in the country do (Linn, Graue, & Sanders, 1990), this school district tested children at third grade. Ms. McNeil did not have the standardized tests uppermost in her mind, but she was aware of students' performances on tests. A difference in views toward standardized tests was most evident among the parents. Regardless of their children's abilities, parents of fourth-grade children were more aware (and realistic) about standardized tests.

An explanation for these differences in rationale and use in alternative assessment may lie in amount of teaching experience in that Ms. McNeil had taught several years less than Ms. Clarke. Furthermore, Ms. Clarke had just completed a Master's degree in literacy. There are some indications, however, that these immediately obvious reasons provide only a partial explanation. For one thing, even intern teachers in their first year of teaching show very different uses of journals and observation schemes (Richert, 1990). For another, there was little in Ms. Clarke's graduate program on integrating assessment with instruction.

An institutional interpretation also explains Ms. Clarke's need to gather information in relation to goals. There were no mechanisms in place in this district to assess children's progress until the end of the third grade. For all intents and purposes, the district curriculum had been abandoned, and the school site had not taken up the slack. Generally, parents in the district had high expectations of their children and asked frequent questions of the schools. For a conscientious teacher like Ms. Clarke, there were few resources outside the classroom to assist in specifying goals and children's progress. The task of establishing goals and children's progress toward those goals was the teacher's responsibility. While Ms. McNeil claimed to minimize tests, knowing something about student progress relative to an "objective" measure may have a subtle (and sometimes not so subtle) effect on teachers' views of responsibility in establishing student goals and progress.

The differences in the practices of Ms. Clarke and Ms. McNeil illustrate a problem that portfolio assessment must overcome if it is to be a lasting rather than faddish phenomenon. For portfolio assessment to be an enduring part of school practices, the uses must go beyond the classroom and be part of policy-making of schools, districts, and states. Many current suggestions on portfolio assessment disregard the mechanisms whereby the two tiers of assessment—that of teachers and that of policy-makers (Cole, 1988)—can be linked. Without such links, the doubts about alternative assessment expressed by Ms. McNeil will probably limit its productive use in and beyond the classroom. Unless information gathered by teachers and children is tied to uses in schools, such as sharing across grade levels or use in school planning by principals and teachers, teachers may do as Ms. McNeil did—keep student work in portfolios but scarcely scratch the surface of the potential of alternative instructional-assessment formats for informing and guiding instruction, parents, and children toward the higher literacies.

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THE DEVELOPMENT OF A QUALITATIVE INVENTORY OF HIGHER LEVELS OF ORTHOGRAPHIC KNOWLEDGE

Donald R. Bear, Shane Templeton, and Michael Warner
University of Nevada, Reno

Recent work has investigated the strength of the relationship between reading ability and spelling knowledge. Several of these investigations have been based on Henderson's model of developmental orthographic knowledge (Henderson, 1990; Henderson & Beers, 1980; Henderson & Templeton, 1986; Templeton & Bear, in press). For a good many years the relationship has appeared to be quite strong, particularly at the lower levels of literacy development. Recent studies have found correlations between .70 and .90 for younger subjects (Bear & Barone, 1989; Morris, Nelson, & Perney, 1986), and for upper elementary students Zutell (in press) found that spelling accuracy among fifth graders was a better predictor of reading test scores than was accuracy in oral reading. These findings might indicate that, rather than being merely one of many literacy skills, orthographic knowledge—as represented by students' correct and incorrect spelling—may in fact play a more seminal role in the processes of reading and writing.

Our understanding of developmental word knowledge beyond Grade 6, however, has remained somewhat murky. Educators have long understood that word knowledge continues to develop during these years, but it has been difficult to gain much insight into what and how such knowledge might be developed. In work with older students, Templeton has demonstrated that there is a pattern to spelling errors which reflects the higher levels of developmental orthography, particularly in terms of derivational morphological relationships (Templeton, 1989; Templeton & Scarborough-Franks, 1985).

The present study describes (a) the development of a qualitative spelling inventory which could be used to provide a featural analysis of errors for seventh and eighth grade students, and (b) the relationship between this orthographic knowledge and reading achievement among seventh and eighth grade students.

METHOD

Subjects

Data were collected from a total of 456 middle school students residing in a moderate-sized city (population 250,000) in a western state. Two-hundred forty-seven of these students were seventh graders (126 males and 121 females) and 209 were eighth graders (106 males and 103 females). Approximately 15% of the sample reported that they were 12 years old; 47% indicated that they were 13; 33% indicated that they were 14; and about 5% indicated that they were 15 or 16 years old.

Instrumentation

Stanford Achievement Test (SAT). Students' stanine scores on the Reading Comprehension and Spelling subtests of the *Stanford Achievement Test* (1985) were collected by examining school records. Form E of the test had been administered to students during the spring of 1989, 2 months prior to administration of the spelling inventory used in the present study. For seventh and eighth grades, internal consistency reliability coefficients (Kuder-Richardson Formula 21) for the Reading Comprehension and Spelling subtests range from .91 to .93, as reported in the *Technical Data Report* (1985).

Spelling inventory. A spelling list consisting of 23 words was developed and administered to students. The words were selected based on the extent to which they represent features associated with different stages of spelling (Schlagal, 1989). This spelling inventory has some unique properties in that the words were chosen from a word list which takes into account the words' frequency of occurrence in graded texts and in students' writing, as well as the probability of being misspelled by students (Jacobson, 1981). The inventory is *qualitative* because the words that comprise it were selected not only for these criteria, but because most of the words, taken together, represent a substantial number of higher order features of the orthographic system. Based on previous work (e.g., Schlagal, 1989; Templeton & Scarborough-Franks, 1985), errors were predicted for these higher order features: least stressed vowels or schwas in derivational forms, assimilated prefixes, and word root forms, the constancy of which students would be familiar with only after extensive experience with the orthographic system through reading, writing, and focused examination.

An attempt was made to include words which would be of varying degrees of difficulty for middle school students, focusing primarily on the higher order features characteristic of the Syllable Juncture and Derivational Constancy stages (Templeton & Bear, in press). Students at the Syllable Juncture stage, for example, have mastered most vowel patterns within single syllable words and are developing an understanding of the conventions that govern spelling at the juncture of syllables: at such junctures letters may be doubled (swa*tt*ed), dropped (decorat*e* + or = decorator), changed (wear*y* + est = wear*i*est), or they may remain the same (claim + ing = claiming). Students at the Derivational Constancy stage are developing an understanding of the morphological relationships represented in the orthography across words that are derivationally related. For example, they learn that although the spelling of the italicized letters in the following derivational pairs remains constant, the pronunciation changes: comp*os*e/comp*os*ition, colum*n*/colum*n*ist, ex*hilar*ate/*hilar*ious. Students at this level also learn about syllable junctures that are based on *meaning* as in the examples of assimilated prefixes in the words a*tt*ract (ad + tract) and su*pp*ress (sub + press). A complete list of the words in the inventory is presented in Table 1.

Words may represent more than one feature. *Correspond*, for example, presents two common potential errors: First, though there is only one "r" sound heard in

Table 1

Words on the Spelling Inventory and Percentages of Students Correctly Spelling the Word

Word	Percent Correct
inspection	95.5
cattle	95.2
resident	90.4
preparing	90.1
caught	88.6
popping	38.4
puncture	76.5
confidence	75.7
decorator	68.2
prosperity	66.9
opposition	54.6
emphasize	45.8
succession	34.9
correspond	32.0
commotion	31.6
accustom	25.9
reversible	23.7
suppress	22.4
propellant	22.1
criticize	19.3
adjourn	10.3
exhilarated	5.7
indictment	4.4

correspond, the spelling of /r/ in each morpheme is retained when the prefix, *cor-*, is appended to the base; second, because the second syllable of *correspond* is least stressed, the vowel in *re* is reduced to a schwa and thus sound is not a clue to correct spelling. *Opposition* is another example: First, though there is but one /p/ sound at the beginning of the word, the *p* is doubled (the prefix is actually spelled *ob-*), and although the /b/ was historically assimilated into the /p/ at the beginning of *position*, a consonant letter remains in the prefix to indicate that this is indeed a prefix and represents a consistent meaning. Second, the reduced vowel in the second syllable offers no phonetic clue to the spelling.

Procedures

English teachers from one middle school were contacted and asked to participate in the study. A total of eight teachers collected data in one or more of their seventh- and eighth-grade English classes. Teachers were instructed to tell their students that some of the words would be easy, and some would be difficult. They were also instructed to tell the students to "spell [the words] the best you can." The teachers then dictated the spelling words. The words are in Table 1, but were presented in a random order. Teachers were asked to say the word, use it in a sentence provided by the researchers, and then repeat the word again. No instructions about the rate of presentation of the words or exact rules for word pronunciation were given to the teachers.

Two types of scores were derived for the spelling inventory. First, a student raw score on the inventory consisted of the number of words spelled correctly. Because the handwriting of the students was not always easy to read, data on interscorer reliability were collected. Spelling protocols for 25 students were randomly selected from the larger sample. Two raters scored each of the 23 words in each protocol. The two raters disagreed about whether or not a word had been misspelled for 3 of the 575 words scored, representing an error rate of .5%.

A second type of scoring was based on stages of spelling. In previous studies with elementary students, raters used a 15-point scale to evaluate students' spelling to determine a specific stage of spelling according to the stages described by Henderson (1990). The interrater reliability coefficients between raters in the studies of elementary students have been ,91 or better, and the correlation between the number of words spelled correctly and the spelling-by-stage assessment has been just as highly related (Bear & Barone, 1989). Accordingly, the first two authors evaluated data from 51 subjects selected at random. The interrater reliability for the spelling-by-stage assessment for these samples from middle school students was .83. The correlations between the number of words spelled correctly and the spelling-by-stage assessments of the two raters were .91 and .83.

RESULTS

Psychometric Characteristics of the Spelling Inventory

All statistics reported below were obtained using the *SPSS-X* (1988) computer program. The point-biserial correlation coefficients between number correct on the spelling inventory, and grade level and sex, were .13 and .10 respectively. Although these two coefficients were reliably different from zero (at alpha = .01), they were so small that all the students, across grade and sex, were combined together into one sample for purposes of further analysis. The correlation between age and number of words spelled correctly was not significantly different from zero (at alpha = .05).

The mean stanine score on the Reading Comprehension subtest was 6.10 ($SD = 1.79$). The mean stanine score on the Spelling subtest was 5.76 ($SD = 1.74$). The mean number of words spelled correctly for the total sample was 11.68, with a standard deviation of 3.97. Kurtosis for the distribution of spelling scores was −.224; skewness was −.117. The values of these latter two statistics suggest that the distribution of spelling scores was approximately normal.

Internal consistency for the 23-item spelling inventory (using Cronbach's alpha) was .81, suggesting sufficient reliability for the development of a screening instrument. The concurrent validity of the inventory was assessed by correlating it with the Reading Comprehension and Spelling subtests of the *Stanford Achievement Test*. The correlation of the number of words spelled correctly with Reading Comprehension was .59 ($n = 411$). The correlation with Spelling was .70.

Difficulty Levels for the Spelling Words

Of the twenty-three words presented, the two words most often spelled correctly were "inspection" (95.5% correct) and "cattle" (95.2%) correct. The two words most often misspelled were "exhilarated" (5.7% correct) and "indictment" (4.4% correct). A complete list of the words, along with the percentage of students who spelled them correctly is presented in Table 1.

DISCUSSION

Given the mean stanine scores in reading and spelling, this sample of students appears to be reasonably representative of the national norm group of the SAT (at least in the areas of reading and spelling). The above results suggest that the scale has good reliability and validity for research purposes and, at its present length, for development as a screening instrument.

Neither grade level nor sex were meaningfully related to performance on the spelling inventory. This may indicate a certain stabilization in orthographic development during this period. Performance on the spelling inventory was normally distributed and the internal consistency of the measure was acceptable.

Given further studies to replicate these findings, researchers may be able to use the spelling inventory as an indicator of subjects' orthographic knowledge. There was good agreement between the raters in using the more global spelling-by-stage assessment. More work with the spelling-by-stage assessment with less experienced raters needs to be conducted. Importantly, it is possible that with further development of the inventory teachers will be able use it and the spelling-by-stage assessment with their students to help guide their planning in spelling instruction and vocabulary. For example, the teacher who administers the inventory at the beginning of the school year will have not just a raw score on a spelling test but will know that the underlying word knowledge of the student who spells *exhilarate* as EXILIRATE or EXILARATE will be much farther advanced than that of the student who spells the word as ACKZILARATE. The former type of student will benefit tremendously from explanations about how spelling preserves meaning across words that share the same word root as well as how the prefix *ex-* functions; the latter type of student may benefit simply from an *awareness* of these facts but will likely not be able to apply them for awhile in his or her spelling and word analysis.

Perhaps the most interesting finding was the significant relationship between a standardized reading comprehension measure and the spelling inventory. Although this relationship has been found in studies of elementary children, this study seems to indicate that reading comprehension is closely related to spelling achievement and development for middle-grade students as well. Surely there were students in this sample who are good readers but poor spellers; overall, however, the higher the comprehension scores, the better the students spelled.

This study supports previous research in which spelling was related to reading comprehension (Fischer, Shankweiler, & Liberman, 1985; Stanovich & West, 1989) suggesting that knowledge of orthographic structure underlies more efficient and text appropriate reading. Because older students are acquiring orthographic knowledge that grounds awareness and understanding of morphological or semantic aspects, it appears quite likely that spelling intertwines with vocabulary development. More generally, therefore, in addition to revealing information about students' word knowledge, a beginning-of-the-year administration of the inventory may provide teachers with an indication of their students' *literacy* proficiency as well. Research needs to explore these possible interconnections further.

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THE COMPUTER AS A SOCIAL/PHYSICAL ENVIRONMENT IN EMERGENT LITERACY

Kerry Olson and Elizabeth Sulzby
University of Michigan

Over the past decade the microcomputer has rapidly become infused in our culture, redefining and expanding our notions of literacy in ways we are only beginning to understand (Selfe, 1989; Sulzby, 1988). It is becoming increasingly common for many U.S. children to have seen a computer being used by one or both parents as early as other, more traditional, literacy tools.

Researchers in Project CIEL (Computers in Early Literacy) at the University of Michigan have examined the use of the computer as an emergent literacy tool within kindergarten and first-grade classrooms. Sulzby (1988, 1990a) conceptualizes the computer as an evolving literacy tool. We approach this both in the technological sense, as new hardware and software alter and redefine its use, and in the personal, developmental sense, as children change any given piece of software through their emergent concepts (Sulzby, Olson, & Johnston, 1989).

The theoretical framework for this study is that of emergent literacy—that is, the assumption that children develop concepts about reading and writing from the social and physical environment around them long before they can read and write conventionally (Dyson, 1985; Ferreiro & Teberosky, 1982; Sulzby, 1983, 1989). Given this framework, observations were made about how children at differing levels of literacy approached writing at the computer, including how they treated the computer as a physical environment and as a social environment.

METHOD

This article draws upon data from two different school districts, one in a university city and one in an economically depressed urban city. The conditions in these two settings differ a number of ways, and the longitudinal research is at different stages within each site. The research was funded partially by the Spencer Foundation, the University of Michigan, and Apple Computer, Inc.

Sites and Computer Implementation

CIEL–Ann Arbor. In Ann Arbor, researchers are in the third year of a longitudinal study. One kindergarten teacher is in the third year of the study; one first-grade teacher is in the second year. Data are also included from a second first-grade teacher who was studied in the first year. The participating teachers were selected based upon their interest in emergent literacy, as well as their interest in incorporating computers into the ongoing reading and writing curriculum. The working relationship with the teachers was a collaboration, with the CIEL team providing support for implementation of emergent literacy and computer activities, and the teachers providing suggestions and feedback regarding design and outcomes.

Each classroom was equipped with three Apple IIGS computers and a printer; this number was reduced to two computers after the first year. Each teacher took an active role in selecting software that he or she felt was best suited to the needs of his or her classroom, choosing from among a collection of software which had been critically reviewed and highly rated by the researchers (Olson & Johnston, 1989; Sulzby, Olson, & Johnston, 1989). During the first year, a graphics program (*Color Me*) and a word-processing program (*Muppet Slate*) were used in the kindergarten classroom to allow for all of the forms of emergent writing. In the first-grade classroom a slightly more advanced word-processing program (*Magic Slate*) was used.

CIEL–Pontiac. In Pontiac, researchers are in the second year of a 5-year longitudinal study, with embedded case studies at the level of school, classroom, teacher, and individual children (Sulzby, 1988, 1990a, 1990b).

Four of the 8 classrooms participating in the research project have been equipped with computers, in kindergarten last year and with the same group of students in their first-grade classrooms this year. Due to equipment delays, our kindergarten observations were limited to the last 4 months of the school year. Each classroom was equipped with three Macintosh SEs connected via a local network to a single printer. The software provided was *MacPaint*—a graphics program which allows for all of the forms of emergent writing, including scribble and drawing. Children were also introduced to a program called *Playroom*—an open-ended, exploratory program which can easily be used in collaboration with a peer. Introduction of *Playroom* was videotaped in each classroom (Sulzby, 1990b).

Children were followed longitudinally into the first grade. Each classroom was equipped with two MacSEs and a printer. *StoryWriter*, a speech-enhanced word processor, was added to the two pieces of software used in the kindergarten. This program allows for letter-based writing only; it includes ready-made pictures which can be inserted into stories and utilizes speech synthesis to "read back" what the children have written, using linguistic rules common for current software of this type.

In both sites, children were introduced to each piece of software in group settings, with follow-up opportunities to use each piece of software a number of times under supervision of the research teams. After the initial introduction, children were free to choose which programs they wanted to use, according to limits or encouragements from their classroom teachers.

Data Sources

Data collection. The CIEL studies of children's reading and writing have involved a number of research strategies (Olson, 1989; Sulzby, 1988, 1990b). In both sites, individual reading and writing samples were collected, both on and off the computer.

Other data included series of full-day observations, teacher interviews and the informal feedback and interactions which occur during weekly visits to each site, documented through notes entered into the files. In Ann Arbor, extensive observations of children's writing at the computer have been conducted throughout each of the school years. In Pontiac, observations began in February of kindergarten due to the late arrival of computers. Data consist of informal fieldnotes, samples of children's printouts and data files, and videotapes of selected sessions in the classroom and of individuals or dyads in conference rooms in the schools.

Analysis. All phenomena reported in this paper have been verified by at least two researchers who were physically present, viewed videotapes, and/or have read observational notes. Children's writing samples were analyzed using a scheme for classifying children's forms of writing and rereading (Sulzby, 1989) adapted for use with the computer and verified by both researchers. This article focuses upon a description of how children write using the computer and specific physical and social features surrounding computer use.

FINDINGS

The first three findings replicate previous findings in emergent reading and writing. The fourth finding reflects some of the physical and social characteristics which are more uniquely associated with the computer as a tool for writing. It is comprised of a cluster of related observations.

Computers for Composition, Rereading, and Sharing

Young children can and do use computers as writing tools. The researchers observed writing naturalistically and elicited individual composition and rereading on the computer. Children were observed voluntarily sharing their writing with others, as well as writing collaboratively.

In classrooms where software allowed for drawing and scribble as well as letter-based writing, children have used all of the previously reported emergent forms of writing at the computer. However, even when using programs that support drawing and scribble (*Color Me, MacPaint*), children have tended either to engage in letter-based writing or to use graphics capabilities for tasks other than writing. When their focus was upon graphics features, children rarely showed evidence of compositional intent of using these forms for writing. Children often described these computer activities as "making designs" or "drawing pictures" (observations primarily from naturalistic observations). Choice of these programs was primarily limited to kindergarten, but this may have been influenced by their first-grade teachers urging them to write with letters.

At the kindergarten level, children in Ann Arbor sometimes wrote with scribble and drawing; more often, they used random and patterned letter strings, environmental print, invented spelling, and made lists of conventionally spelled words. Kindergartners rarely engaged in actual story composition on the computer unless elicited by an adult, although this was a common noncomputer activity. Ann Arbor first graders also engaged in many of the same letter-based writing activities as the kindergartners, with the primary difference being that unelicited story composition was the most frequently observed writing activity, usually at the level of invented spelling/conventional mix (Sulzby, 1989).

In both grades, children moved across different levels of writing for different types of tasks, much as they have been observed to do when writing with pencil and paper (Sulzby, 1983, 1989; Zecker, 1991). The same child might be observed using invented spelling to write a word list one day, using scribble or random letter strings to write an elaborate story on another occasion, and copying conventionally spelled words from a classroom poster.

In Pontiac, we observed all of the forms of writing; however, story composition and higher level forms of writing were less in evidence at both grade levels at similar points during the school year. Findings in Pontiac were limited by the fact that observations of a full school year of computer use were not yet available at either grade level.

Children Progressed From Emergent to Conventional Literacy

In addition to cross-sectional data, we demonstrated in our second year of research with longitudinal data that children advanced as they moved into the first grade—both in terms of becoming more conventional in their writing at the computer and in terms of their knowledge and mastery of the computer itself.

These findings are especially strong for Ann Arbor subjects. In the low income context of Pontiac, we replicated these longitudinal findings; in January of first grade, most children were writing readable compositions on paper but many were still writing their alphabet, using letter strings, or copying when they wrote on the computer. In April, 3 months later, many were writing readable text on the computer and many others were showing compositional intent.

Composition Comes After Exploration

Composition means that type of writing in which the child appears to have a message or plan in mind prior to putting graphics on paper or to have a standard by which to make self-corrections while writing. In both sites, composition at the computer was not immediately evident. Children's initial focus when using the computers seemed to be exploring the unique features and functions of the computer and software, rather than upon composing. This playful, exploratory phase appeared to be important to children's developing sense of mastery and control over the physical and procedural aspects of using the computer. Children have typically had years of exploration with the more traditional and readily available literacy tools within our culture, such as paper, pencils and books. It comes as no surprise, then, that the children we observed showed evidence of composition with pencil and paper before doing so with computers. After three to five open-ended sessions at the computer, however, most children began using the computer primarily as a tool for composition in those sessions for which the researchers were present.

Computers: Unique Physical and Social Contexts for Writing

In contrast with the first three findings, this set of observations reflects some of the more unique aspects of the computer as a writing tool. While writing patterns at the computer were often very similar to writing patterns observed with pencil and paper, there were notable exceptions. These exceptions often appear to be associated with the physical characteristics of the computer itself, as well as the social context which exists around the computer.

Physical characteristics. Two aspects, or physical characteristics, of writing at the computer stand out. The nature of a fluid or easily movable electronic text and the means by which this text is entered and altered at the computer (via a keyboard or other peripheral device and commands dictated by the software) affect how the writing and reading process is shown in a number of ways. (This does not necessarily mean that children's concepts are different; see Ferreiro & Teberosky, 1982; Shatz, Kamberelis, Halle, & Sulzby, 1991.)

When writing with pencil on paper children form each letter by hand in a seemingly deliberate order, even when those orders are termed random (Sulzby, 1989). A child usually writes within the physical boundaries of a sheet of paper, the pencil or pen serving as a place holder for the current point of focus within the text, which itself is physically static and spatially represented on the page. Making changes in the text involves a direct physical process of removing and rewriting text, unless one chooses to start over.

When writing at the computer, the child must alternate focus between the electronic text as it is displayed on the computer screen and the device which is used to enter this text in a somewhat indirect and abstract fashion. In most cases, the child uses a standard keyboard, which bypasses the need to hand form letters. Even if a mouse is used to enter letters, the physical cue of static text on a page may be lost—electronic text is fluid and reformats automatically as new text is entered. Text may also be altered through editing commands or procedures determined by the software, rather than directly acted upon by the child.

Preliminary findings indicate that gaining a sense of electronic text and entering and editing text are important issues for children learning to write at the computer. (For a detailed description and analysis, see Olson, 1989; Olson & Johnston, 1989; Olson & Sulzby, 1990.) The locational problem of maintaining their place in text during composition was indeed a challenge for children writing at the computer. Children typically responded by pausing to reread their text on screen often. This frequent rereading sometimes led to revision, as children identified changes or corrections they wished to make in the process of reviewing their text.

Automatic reformatting of text on screen appeared to confuse or disorient children initially, and sometimes remained a source of difficulty, especially at the kindergarten level. Many children responded to the automatic formatting of text on screen by rereading over the relocated text, as if to make sure it was still the same. Some children attempted to bring automatic formatting under their control, using the space bar, for example, to advance to the next line rather than allowing the text to "wrap" automatically. Rereading large blocks of text (which required scrolling upwards or downwards) was also problematic for many children; they lost their place in text when its physical location changed. These issues became less difficult for children as they acquired experience with the fluidity of text on screen. At the first-grade level, we observed children taking advantage of automatic reformatting in deliberate ways as they arranged and edited text.

It has been suggested in previous literature that bypassing manual transcription might allow children to devote greater attention to other aspects of the writing process, such as composition and letter-sound relationships (Phenix & Hannan, 1984; Rosegrant, 1986). Although these benefits were not generally evident in these two studies to date, a range of approaches to text entry at the keyboard were observed. These appeared to correspond both to developmental level and task. The approaches included rapid typing of random letter strings, with seemingly little regard for which letters came spilling out onto the screen, as well as very deliberate selection, deletion, and replacement of letters as children sounded out words and explored alternate invented spellings.

The need to locate letters does not seem to deter children from the writing task, although the "hunt and peck approach" is time consuming and requires perseverance. A side effect of this approach was the frequent vocalization of letter names as children scanned the rows in search of specific letters. An obvious shortcoming of the keyboard as an input device is that it does not support free-hand drawing, scribble and hand-formed letters, unlike the mouse and similar input devices. Although most children used the mouse rather easily for drawing and handforming letters, it presented other challenges and difficulties (for example, many children had initial difficulty in learning the "double-click" signal used in many pieces of Macintosh software). In Ann Arbor in the kindergarten classroom, and in Pontiac in all classrooms, we were able to observe children's abilities to move across different input devices, in this case the keyboard and the mouse, in a selective fashion for different purposes.

Social environments. The social environment of the classroom played a key role in determining how the computer was used. At the teacher level, we have observed the impact of messages, both implicit and explicit, regarding the computer's functionality and value as a literacy tool. For example, in one classroom, the teacher made it clear that children were not to waste their turns at the computer; her expectations for the acceptable "quality" of writing at the computer were higher than her expectations for writing at their desks. In general, the notion that the computer was a limited resource served to elevate its status within the classroom. In several instances, children actually refused their regular turns at the computer because they were saving their turns for when they had something really special or important to write.

Within each classroom, children showed a great deal of interest in the computer activities of their peers. Children were eager to call one another's attention to their work, and individual "discoveries" (such as finding the key that capitalizes letters, or "pushes them to big" as one kindergartner put it) had a tendency to spread like wildfire. In a few instances, the children who discovered special software features—such as "typestyles" in *Magic Slate* and the speech function in *Story Writer*—were accorded the status of resident computer experts.

Collaborative writing was also participated in at the computer, in most classrooms seemingly more frequently than collaborative writing at children's desks. This seems to have been, in part, a function of teacher practices and the tendency on the part of teachers to view the computer as a device which allows, and may sometimes require, children to assist one another. In addition, some of the characteristics of the computer, such as the upright, public display of clear, uniform print, the keyboard as an input device, and the ability to print out multiple copies, provided a context that was conducive to collaboration (Dickinson, 1986; Heap, 1986).

DISCUSSION

A systematic comparison between various aspects of children's emergent writing at the computer and with pencil and paper is needed. At this point, comparisons are limited, since currently available software does not fully support all of the forms of emergent writing; that is, it does not allow them to move easily across drawing, scribble, and letter-based forms of writing (including handformed letters). The fact that such software is not yet available limits what children are able to do at the computer and, correspondingly, limits current research.

Differences in the findings across the two sites must obviously be interpreted with caution, since children in Ann Arbor had much greater access to computers as writing tools throughout the school year, in addition to other demographic differences. In addition, the participating teachers were very comfortable with the use of computers as writing tools and took an active role in implementation, training, and support. In Pontiac, teachers were just becoming familiar with the computers and with emergent literacy techniques during the period of data collection to date.

Another limitation is tied to the fact that researchers as well as teachers come to the computer having acquired literacy, as well as conceptions regarding how literacy develops, within the framework of the traditional print medium. This sometimes blinds adults to ways in which the computer as an evolving literacy tool (Sulzby, 1988) pushes against the boundaries of current definitions and conceptions.

Experienced writers have been reported to need to supplement interactions with electronic text with handwritten text or hard copy (Selfe, 1989). These writers may be at a disadvantage in the sense that they are coming to the computer with years of learned habits acquired within a pencil and paper writing context. For young, emergent writers the introduction of the computer raises interesting questions, not only in terms of their developmental needs and how these map onto this particular writing environment, but also because of their relative lack of experience and the possibility of a corresponding openness to developing concepts and strategies to match the conditions of a different sort of writing context.

These studies provide preliminary evidence that the computer may be incorporated meaningfully into young children's developing repertoire of writing strategies and concepts. Since they appear across two greatly different sites (both in terms of subjects and implementation), the common findings about emergent writing become much stronger as indications of the developmental character of children's literacy. They expand what is already known about children's reading and writing with traditional literacy tools to the arena of the computer.

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FROM EMERGENT LITERACY TO EMERGENT PEDAGOGY: LEARNING FROM CHILDREN LEARNING TOGETHER

Cheryl R. Troyer
St. Charles, Illinois School District 303

The concept of emergent literacy has been used by some researchers to refer primarily to the period before a child encounters formal instruction in writing and reading (Mason & Allen, 1986; Teale & Sulzby, 1986). Yet children are far from finished emerging into literacy when they enter school (Bussis, Chittenden, Amarel, & Klausner, 1985; Dyson, 1988), and the formality of the "instruction" they encounter varies greatly (Bloome, 1989; Clay, 1982). The need to know more about how children begin to learn to read and write has led researchers into homes and classrooms where literacy can be studied as it is being used and developed (Bissex, 1980; Dyson, 1988; Heath, 1983; Taylor, 1983). At the same time, the work of a number of educators and theorists (Goodman, 1986; Hansen, Newkirk, & Graves, 1985; Newkirk & Atwell, 1988; Newman, 1985) has influenced a movement toward integrated language arts and whole-language based programs. The underpinnings of that movement lie partially in the understanding that reading and writing are language forms which, while having their own unique characteristics, share many attributes with spoken language (King, 1989; Langer, 1986; Olson, 1977). Looking closely at what adults do at home to support children who are learning to talk has increased our understanding of how to help young students learn to read and write in school.

One key to understanding how adults assist oral language development is Bruner's (1975, p. 12) concept of scaffolding, in his words, "supporting the child in achieving an intended outcome, entering only to assist or reciprocate or *scaffold* the action." Such support and assistance may take the form of sharing or *calibrating* attention, taking joint action, marking the completion of segments of the task, providing a launching platform for the next step or exchange or action, or widening or extending the range of contexts for the action. Although Bruner refers to adult-child interactions in his conceptualization of scaffolding, scaffolds offered in the classroom between children working together may have a special kind of power. When classrooms are considered communities of learners (Bloome, 1989; Goodman, 1986; Vygotsky, 1978), opportunities for such assistance and collaboration are many. Scaffolds offered between peers may have power in two ways: they are generated by someone close in developmental level to the individual who needs the assistance, and they may be less prone than those provided by adults to appropriate the child's original purpose to fit a preconceived plan (Searle, 1984). In addition, such collaboration is consistent with the nature of learning as a social process. Studying instances of peer scaffolding may, then, help researchers and teachers find additional ways to provide assistance to emergent readers and writers. The present study sought answers to the questions: What can we learn from studying children as they work together in reading/writing activities, and how can these observations inform pedagogy?

METHOD

Data Source

The data used for this study were collected during the fall of 1989 as part of a larger naturalistic study of first-grade children's uses of oral and written language (Troyer, 1991). The teacher whose classroom I studied had been moving toward integrating reading and language arts instruction throughout the day and throughout the content areas, but this was the first year she had given up the basal reader altogether, planned collaboratively with another first-grade teacher, and used thematic units as the core of her program rather than as a supplement to it. Her class was self-contained and heterogeneous, one of four first grades in a K–3 elementary school in a rural midwestern community.

For the larger study, data were collected over an 18-week period in the form of field notes, audiotapes, and videotapes. All notes and tapes were transcribed into over 400 pages of data. For the present study, only transcripts of instances in which two or more children were working together without direct involvement of the teacher were analyzed. Nine such instances emerged. Of these, six were reading and/or writing-related tasks; of the other three, one involved primarily illustration, and two others involved free choice during an indoor recess period. The briefest of these instances lasted 10 minutes; the longest nearly 25 minutes. The transcripts of the nine instances totaled 52 pages.

The larger study focused on 6 children, and at least one of those children participated in each of the instances analyzed in the present study. Seven additional children were also involved in these instances. The 13 children (6 boys, 7 girls) ranged in age from 6 years 0 months to 7 years 5 months in September. The children came from a rural, lower middle-class SES area, and all were Caucasian. Three students had been in a developmental first-grade program the previous year, and one was currently receiving services in a resource learning disabilities program for part of each day.

Procedures

I used Corsaro's reactive entry strategy (Corsaro, 1981, p. 133) to "become part of the activity without affecting the nature or flow" of that activity. I began by "hanging out" in the learning center of the school, chatting with children as they checked out books. When I followed them back to their classroom, the teacher introduced me as a friend who used to teach in their school, but who now taught people how to be teachers. Because adults are frequently in and out of the classroom, I was in no way considered a novelty. My role was more observer than participant, although I did talk to children when it was natural to do so, and they frequently read to me. Throughout the study I observed the class as a whole, but gradually came to focus on

6 children using a variation of a procedure described by Graves (1981) as an inverted pyramid approach.

Bogdan and Biklen's (1982) model of inductive data analysis, in which data are organized and reorganized as patterns emerge, was used to describe and interpret the observed behaviors. Ten preliminary categories were collapsed into three broad kinds of student-to-student interaction: *procedural negotiation*, including (a) defining the task, (b) dividing responsibilities, and (c) clarifying roles; *procedural scaffolding*, including (a) holding attention, (b) confirming that a segment is complete, and (c) telling another what to do; and *informational scaffolding*, including (a) requesting or supplying information, (b) agreeing or confirming understanding, and (c) making intertextual connections. Verbal exchanges between students were then coded according to these categories.

RESULTS

Procedural Negotiation

Deciding who goes first, who does what, and exactly what it is they are going to do was consistently the first order of business when children collaborated without a teacher. Although such behaviors do not fit Bruner's definition of scaffolding, they do represent problem solving and task ownership for the learners. They set the parameters within which the tasks of learning would proceed. In the nine instances analyzed, a total of 44 exchanges involving procedural negotiations were observed.

Consider Cortney and Jay, who share one paper, one pencil, one book, and the task of finding all the pairs of rhyming words a book contains:

> J: I'll do one page and you'll do one page. I do one page. You do one page. So me, it'd go me, you, me, you, me, you.
> C: Nuh uh! (takes book from him) We're s'posed to learn how together.
> J: No, no, no. It'll go me, you, me, you, me, you.
> C: Nuh uh. We need to write. I'll find the rhyming words and I'll do whatever. I'll do that one and write, then you'll do one and I'll do one.
> J: No!
> C: If it goes like that (moving pencil back and forth between pages), it would be fair. Or maybe it would be okay if you wanted me to do it or else for you to do it.
> J: Then it'll go this page, this page, this page, this page (pointing back and forth).
> C: Okay, then. Who's got this page?
> J: You do this whole thing.
> C: And then you do that one.
> J: Okay.

The entire exchange took just over 1 minute, yet represented a negotiation that got the procedural decisions out of the way. For the next 10 minutes, Jay and Cortney focused on the task at hand.

Sometimes, especially if responsibilities were not clearly divided at the outset, a further clarification of roles was necessary later in the task. Gary, Eric, and Jay are working together to draw pictures of objects beginning with the letter *d*. When they finish, they will give their paper to another group who will then attempt to guess what the pictures are and to write the names of the pictures.

G: Now what should we do?
(no response)
G: Now should I draw a duck?
J: I'll draw, okay?
G: No, we have to take turns.
E: Draw a duck.
J: Then it'll go to Eric then me. Just draw a duck. Wanna draw?

Gary's questions served to move the group forward toward completion of their task at a time when the action appeared stalled. Once they had established that each would have a turn, they could concentrate on the content of the task.

Other procedural negotiations involve defining the task itself (*what* must be done) rather than delineating the roles of the participants (*who* does what). Jenni and Mike are talking to Jay:

M: You're supposed to read it to her (the teacher) first.
Jen: Yeah.
M: Before you get your markers. You have to go put 'em back.
Jay: I do not have to put them.
M: You do have to read it to her.
Jay: Jenni didn't.
M: Yes she did!
Jen: Yes I did! (in unison)

In this case, two students reminded a third one of the procedures set out by the teacher at the beginning of the task of writing, reading, and illustrating. They prevented Jay from skipping the middle step in the process.

Even when children were not assigned to work together, they negotiated procedures for working in parallel: the boys divided the Legos so that each could build their specialty; the girls took separate sections of the puzzle. Jenni and Hannah sat next to each other while they were illustrating a class version of "The Night Before Christmas."

H: Wait, let's, which part shall we draw first?
J: Goin' down the chimney!
H: No, how 'bout . . .
J: We do our own. Let's do our own, Hannah. C'mon, I'm doing the chimney.
H: I'm making him go down the chimney with a bound! No, I'm making him fill the stockings.

Hannah's initial suggestion was that they would draw the same things. When Jenni suggested how they should start, and Hannah disagreed with Jenni's idea, Jenni suggested that they work separately. For a moment, Hannah abandoned her own idea and said she would draw what Jenni was drawing, but she quickly agreed to Jenni's suggestion that they work independently. Their negotiated decision allowed them to compare and discuss their work with each other during the next 15 minutes.

Procedural Scaffolding

Bruner (1975) discussed the key roles played by joint action and shared attention in the scaffolding process. Marking the completion of a segment of action or providing a nudge toward the next step may be all that is necessary to keep the learning process moving forward even when, as in most natural interactions, this may not be the conscious intent. These nudges may be intended more as a way of maintaining interest or continuing communication. When Mark is retelling a story and Cortney says to him, "And . . . ," followed by an expectant pause, she is urging him to expand on what he was saying. He responds by adding another event to his retelling.

Jay is sitting next to Jenni and staring at her desktop instead of writing about a book as he is supposed to be doing. When Jenni says to Jay, "C'mon, Jay, ya gotta think about what you're doin'," she is holding his attention on the task, while nudging him to move forward. He responds by starting on his own paper.

Eric, Gary, and Jay have been given a paper on which another group has drawn four pictures of objects beginning with the letter *d*. When Eric muses to himself, "Now let's see, what's this?", Gary and Jay respond by turning their attention to Eric and answering his question. Later, when Jay and Eric drift away from the task after Jay mentions pterydactyls, Gary brings them back when he says, "I'm tryin' to figure out this one. Doctor?" Jay responds, "Doctor, yeah." The discussion then moves on to a debate over how to spell doctor, a decision directly related to completion of the task. In these instances, a comment or question offers a scaffold by directing attention to the task and receives one in return through the response that is offered.

Sometimes procedural scaffolding may take a more direct approach. After Jay confirms for Gary that the next picture is a doctor, Gary directs Eric to "Write doctor there." And when Eric responds, "I don't know how to write doctor," Jay says, "I know. D. O." Eric, who avoids using a pencil whenever he can and is in a learning disabilities program part of each day, begins to write.

Even in free play the direct approach is sometimes the most efficient, as when Hannah says to Julie about the puzzle they are doing, "Here, move these. Here. I think I know where these might go." In each of the cases above, the direction was brief, to the point, and just enough to nudge the other learner forward. In the 9 instances analyzed, 53 exchanges involved procedural scaffolding.

Although children did sometimes tell each other what to do, they did not attempt to appropriate another's role by trying to do the task *for* their partner. Perhaps because they had negotiated for themselves who would do what, they remembered and respected their individual responsibilities. They simply gave a directive, then backed off while it was carried out. Often the next exchange was a confirmation that a segment of the task had been completed, as when Jay and Cortney say "Okay" to each other each time they finish writing a rhyming pair, and it is time to exchange roles and turn the page:

> C: Mail, snail. Put the *s* down. *S. n. S* and the *n* looks like (draws one in the air).
> *N* is right there (points).
> J: Snail. (Writes it) Okay.

Informational Scaffolding

Scaffolds related to the content of a task may be closest to the teacher concept of scaffolding. They were the least frequently observed category of student-to-student interaction (36 exchanges), but whenever the need for an informational boost appeared, it was always supplied. One instance of informational scaffolding occurred when Gary, Eric, and Jay were writing the *d* words for another group's illustrations. Jay was attempting to write the word *doctor*.

J: I know. D O.
G: No.
J: Doc. D O. D O K.
G: No, no.
J: Doc. D O K.
G: Ya know Doctor, ya know Doctor Seuss? The first word is Doctor? D R?
(Gary points and Jay gets up to get a Dr. Seuss book.)

Gary has watched what Jay was attempting to do, has offered information from an intertextual connection he was able to make, and launched Jay toward finding what he believed to be the correct spelling of *Dr.* for himself.

In a different instance, Jay makes an intertextual connection when he and Cortney are collaborating:

C: Frog. F, O, R, G.
J: F, *R*, *O*, G. R! F, R, like in the, uh, The Old Oak Tree!

Not only does Jay correct Cortney's transposition of two letters, but he also draws her attention to a story in which they had learned about FR as a letter combination. He gives her the information she needs, and he makes no comment about her error.

One piece of information that is sometimes necessary before a task can proceed is the confirmation that the receiver of the information understands what was said, as when Eric says, "Oh, okay, dog," or when Jenni responds to Hannah, "Yeah, sure." At other times, especially when the information is simple, a simple repetition of what was said acts as a confirmation of understanding or acceptance of the information:

Hannah: What does this say? What does this say?
Cortney: That says *mirror*.
Hannah: Mirror.

Again, in each case assistance was economical and freely given. When one or two words could give enough information, one or two words were all that were offered. Jay corrected Cortney's spelling simply by giving added emphasis to the order of two letters. Gary went for a concrete demonstration by getting a Dr. Seuss book—rather than try to explain what Jay should do and why, Gary showed him.

DISCUSSION

In describing why she began to use a tape recorder in her classroom, Vivian Paley says she realized that she listened more to herself than to any of the children in her classroom, and that she "consistently veered away from the child's agenda" (1986, p. 123). In his longitudinal study of children in Bristol, England, Gordon Wells (1986) observed that in school, children are reduced for a significant proportion of their time to the role of passive respondent, expressing a narrow range of meanings in elliptical and fragmented utterances, while teachers do most of the talking. Transcripts from my larger study (Troyer, 1991) of interactions in small groups that included the teacher support those observations as well.

In the instances reported in the present study, when no adult was included in the group, the children took certain responsibilities that have traditionally belonged to the teacher. They made decisions about how to tackle the task and who would do which aspects of it, and they showed evidence of feeling ownership for the task and a sense of responsibility for its completion. They provided support for each other, in the procedures and the information needed to keep moving forward. Reading and writing tasks were approached as naturally as drawing, building, or doing jigsaw puzzles.

This study involved a brief look at one context and one community of learners. In other contexts, other learners may interact differently. But the findings of this study support the contention that young children do, indeed, work productively without direct adult guidance. They do offer scaffolds for each other, and they get out of the way when the scaffold has served its purpose.

These observations would suggest that teachers should provide many opportunities for collaboration among students in reading and writing tasks. That is nothing new. Many teachers offer such opportunities, but they often attempt to work out all the details for their students in advance. The children in this study handled their own details. They knew good pedagogy; they were natural teachers. They negotiated until they owned the task. They paid careful attention to what other learners were attempting. They offered appropriate, economical, and temporary assistance. And then they got out of the way.

We teach from "scripts . . . not yet fully written," and if teachers and children are to learn together, then "we must listen with curiosity and great care to the main characters who are, of course, the children" (Paley, 1986, p. 131). Those main characters are the best sources for our pedagogical scripts.

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RELATIONSHIPS AMONG PHYSICAL DESIGN OF PLAY CENTERS, TEACHERS' EMPHASIS ON LITERACY IN PLAY, AND CHILDREN'S LITERACY BEHAVIORS DURING PLAY

Lesley Mandel Morrow
Rutgers University

Play is a crucial component in child development. Piaget (1962) stressed its importance in developing representational thought. Vygotsky (1978) saw it enabling children to move beyond immediate stimuli into symbolic, abstract levels of thought. Isenberg and Jacob (1983) observed children in natural classrooms incorporating new information into play behaviors, elaborating and extending what they already knew or could do. Social interaction in dramatic play is particularly beneficial, its accommodation, negotiation, and conflict resolution leads to cognitive growth in general (Christie, 1991). Since the 1930s, early childhood educators have recognized the value of play in social, emotional, and physical development. The use of play to promote literacy development, however, is at an earlier stage. The prevalent concept of reading readiness as a set of abstract skills taught in a formal pencil and paper setting assigns no role to play, especially free play. Recently, play has been given greater importance as a medium for literacy development (Christie, 1991; Morrow, 1990; Neuman & Roskos, 1990; Vukelich, 1990). Given the primacy of play in the early years and the large numbers of young children in educational settings, the constructs of emergent literacy are increasingly more important. They recognize that literacy develops in meaningful, functional social settings. Literacy development involves a child's active engagement, alone and in cooperation and collaboration with peers, builds on what the child already knows, and needs the support and guidance of more literate individuals (Teale & Sulzby, 1986). This study was designed to determine factors that motivate literacy behavior in play. It sought relationships among (a) the frequency of literacy behaviors by children at play, (b) specific materials and physical design elements in kindergarten play areas, and (c) teacher guided experiences related to literacy and play.

Play and Literacy Development

Studies have demonstrated links between types of play and elements of literacy development. Dramatic play, for instance, improves story comprehension and production by helping children better understand story structure, which then helps improve recall and production of story narratives (Mandler & Johnson, 1977). Kindergartners, first graders, and disadvantaged preschoolers trained in thematic-fantasy play outperformed control groups in story memory, interpretation, and storytelling or performed better in story comprehension, recall, and sequencing than did children in adult-led story discussion groups (Saltz, Dixon, & Johnson, 1977; Pellegrini, 1983).

By allowing children to sustain solo discourse without audience input, play contributes to emergent writing abilities (Christie, 1991). Teachers have promoted writing development by modelling functional writing during symbolic play sessions and introducing new functions of print (Schrader, 1988). Garvey (1977) has pointed out the vital role of oral language skills in maintaining dramatic play episodes, complex communication that involves planning, negotiating, prompting, directing, and narrating during play. Lovinger (1974) found that both quantity and complexity of verbalization among preschoolers increased after a play treatment period. Dansky (1980) used adult-guided play to improve children's verbal comprehension, production, and organization. Roskos (1988) observed even very young children at play engaged in paper and text handling, storytelling, and early reading and writing. During play, children demonstrated directionality, print processing, and comprehension, and they recognized that literacy served a purpose.

Play and the Classroom Environment

Physical environment also plays a critical role in the classroom learning experiences of young children (Field, 1980; Phyfe-Perkins, 1979; Sutfin, 1980). For example, partitioning facilitates both peer and verbal interaction as well as fantasy, associative, and cooperative play. Nash (1981) and Moore (1986) discovered that appropriate physical classroom arrangement encourages children to explore, interact, cooperate, read, and speak more. Researchers discovered that including reading and writing materials in dramatic play areas can stimulate voluntary literacy behaviors (Morrow & Weinstein, 1986; Rivlin & Weinstein, 1984). Pellegrini (1983) found that children at play in a housekeeping area encoded ideas more explicitly into language and depended less on contextual assumptions to convey meaning than when they played in the block area. Dramatic props elicited more individual and multifunctional uses of language in either center.

A basic principle of Vygotsky's (1978) theory is that children learn higher psychological processes best with adult guidance in a social environment. Holdaway (1979) takes a similar point of view toward literacy development, the adult providing an "emulative model" for literacy behavior. "Natural" learning is shaped and supported by adult intervention based on the child's needs and current level of ability.

PURPOSE OF THIS STUDY

The purpose of this study was to determine factors that motivate literacy in play. The investigator observed and described: (a) types of literacy materials available, and (b) the number and types of literacy activities discussed, guided, or modelled by teachers. Frequency and types of voluntary literacy activities during play were observed to determine if there were relationships between: (a) voluntary engagement in literacy at play and specific literacy materials and stimuli, and (b) frequency of participation in literacy activities during play and teachers' activities, discussions, or modelling of literacy and play behaviors. Teachers' perceptions about the purpose of play and an analysis of descriptions of children's literacy behaviors during play added to the findings.

METHODS

Subjects

The sample consisted of 530 youngsters distributed among 35 middle-class, public kindergarten classrooms in three New Jersey counties. Mean class size was 18. Observers were student teachers who observed once a week for 8 weeks.

Procedures

Two questionnaires were used. The first, adapted from Loughlin and Martin's (1986) *Survey of Displayed Literacy Stimuli*, was used to determine the presence of literacy stimuli that might motivate children to engage in literacy activities. Items were added, deleted, or modified, based on work by Morrow (1990), Neuman and Roskos (1990), and Vukelich (1990). Survey categories were:

1. Current child-generated (written or dictated) literacy work displayed in space provided for that purpose.
2. Written messages displayed by the teacher for that day's work—schedules, assignments, notices, news, announcements.
3. Displayed directions for ongoing activities—charts, cards, instructions, or procedures.
4. Sign-on charts or sheets that call for children to record information or to sign names.
5. Number of visible and accessible books in the classroom.
6. Number of different kinds of recording tools available, such as crayons, pencils, markers, chalk, typewriter, computer.
7. Number of different kinds of recording materials such as chart and construction paper, newsprint, chalkboard, audiotape, stationery.
8. Print or writing materials related to nearby materials, objects, pictures, and play themes, such as stationery, envelopes, receipts, and labels in a classroom "Post Office."
9. Books related to nearby materials, objects, pictures and play themes, such as pet books in a "veterinarian's office."
10. Books and print segments reflecting children's home language or home culture, particularly appropriate in communities with diverse populations.
11. Labels on cabinets or equipment giving information about contents, use, or procedures.

The second questionnaire noted the number of times during eight observations that teachers discussed, modelled, or suggested the use of literacy materials or activities that might encourage literacy behaviors during free-play periods. This questionnaire was based on the work of the researchers mentioned above and work by Morrow and Weinstein (1986) and Schrader (1988).

Under instruction, observers previewed both questionnaires thoroughly to be sure that they understood each item and how it was to be used. Some items required recording the number and types of elements present or not present in the classroom; others required frequency counts of certain activities.

Observers also recorded the number of children participating in literacy behaviors during free play on 4 different days in 4 different weeks. Those observations were made approximately 5 to 10 minutes apart, depending on the length of a free-play period (generally 30 to 40 minutes). Literacy behaviors were categorized into two major headings: *Reading*, which included browsing, pretend reading, book handling, storytelling, reading aloud to oneself or others, reading silently, reading print displayed in the classroom, and listening to stories read by others or on headsets; and *Writing*, which included drawing, scribble writing, random letter characters, tracing, copying, giving dictation, writing a letter to someone, computer- or typewriting, writing related to themed play, story writing, displaying one's writing, and using any literacy manipulative material. The list of literacy behaviors was adapted from work by Roskos (1988) and Morrow (1990). Additional literacy behaviors, if observed, were added to the list.

The cooperating teacher and the observer in each of the 35 rooms both observed during one free-play period. Reliability checks indicated exact agreement between teacher and observers 87.3% of the time.

Research assistants also wrote detailed anecdotes describing individually observed literacy behaviors, indicating what they perceived as the motivation behind the event—for example, something done by the teacher or another child, a certain piece of material, or a real-life experience. Five reviewers read and evaluated the same 10 anecdotes and found 88% agreement among observers.

Finally, all teachers were interviewed about their perceptions concerning the development of literacy in play.

RESULTS

Displayed Literacy Materials That Promote Literacy in Play

Table 1 presents means for the number of literacy materials available or displayed for children's use during play in the 35 classrooms observed. Items counted were clearly visible at the child's eye level.

The mean number of books per classroom was 34.4. Although there were more books counted than any other kind of literacy material, 34 is considerably short of Huck's (1976) recommendation that there should be 5 to 8 books per child in a classroom. Categories found present at an average of two per room were: (a) current child-generated literacy work on display; (b) different kinds of recording tools; (c) different kinds of recording materials; (d) print or writing materials related to nearby materials, objects, pictures, or theme play; and (e) functional labels. Categories found

Table 1

Means (and Standard Deviations) for Displayed Literacy Materials

	M	Sum
1. Children's literacy work displayed	2.37 (3.88)	83
2. Written messages displayed by the teacher for that day's work	1.37 (1.37)	48
3. Displayed activities for ongoing activities	0.88 (1.32)	31
4. Sign-on charts or sheets	.94 (1.51)	33
5. Number of books in the class	34.4 (20.51)	1,204
6. Number of different kinds of recording tools (pencils, crayons, etc.)	2.65 (2.16)	93
7. Number of different kinds of recording materials (paper, computer, etc.)	2.42 (2.21)	85
8. Print or writing materials related to nearby materials, objects, pictures, theme play	2.28 (2.21)	80
9. Books related to nearby material, objects, pictures, theme play	1.47 (1.00)	35
10. Books and print segments written in children's home language	1.17 (1.00)	41
11. Functional labels	2.31 (1.69)	81
12. Totals for survey	51.82 (32.35)	1,814

Note. $N = 35$ Rooms.

on an average of once per room were: (a) written messages by teachers for the day's work; (b) directions for ongoing activities; (c) sign-on charts or sheets; (d) books related to nearby materials, objects, pictures, or theme play; and (e) books and print written in children's home language. Overall, so few literacy materials were present in play areas that counts included all literacy materials in an entire room.

Teacher Activities That Help to Motivate Literacy During Play

Table 2 presents the number of times over eight observations that teachers discussed, modelled, or suggested the use of literacy materials or activities to encourage literacy behaviors during free-play periods. Each observation covered a 2½-hour session.

The only literacy behavior quite common to all classrooms was the teacher reading to the children—an average of five times over eight observations and a substantial departure from the accepted standard of reading to youngsters at least once a day. Other literacy activities were infrequent, ranging in average from fewer than once to just over once during the 8 weeks. Those categories carried out fewer than once were: (a) children provided time for recreational reading, (b) teacher participating with children during recreational reading, and (c) teacher suggesting that children participate in literacy activities during play. Categories carried out just over once were: (a) teacher engaging children in storytelling, role-playing stories, felt stories, or literature related to content area topics; (b) teacher indicating materials available for use during free play; (c) teacher modeling or participating in literacy activities during play peri-

Table 2

Mean (and Standard Deviations) for Teacher-Guided Literacy Play Activities Over an 8-Week Period

	M	Sum
1. Teacher read or told stories to children	5.14 (2.77)	180
2. Teacher provided time for recreational reading	.04 (1.03)	14
3. Teacher participated with children in recreational reading	.10 (.01)	6
4. Teacher involved children in literature activities such as role playing stories, telling felt stories, and integrating literature into content area teaching	1.77 (.20)	62
5. Teacher indicated literacy materials available for freeplay use, such as reading books, writing, etc.	1.74 (1.0)	61
6. Teacher modelled or participated in literacy activities with children during freeplay such as pretending to be a doctor and writing a prescription for a patient	1.34 (1.0)	47
7. Teacher suggests children participate in literacy activities during play	.77 (.05)	27
8. Teacher positively reinforced literacy behaviors during play	1.94 (1.0)	68
9. Teacher listened to and discussed children's literacy activities during play	0.82 (0.2)	29
10. Totals for survey	14.11 (7.2)	494

Note. $N = 35$.

ods; (d) teacher positively reinforcing children's literacy behaviors during play; and (e) teacher listening to and discussing children's literacy activities during play.

Children's Use of Literacy Behaviors During Free-Play Period

Children's literacy behaviors were recorded during four free-play periods on 4 different days, providing 16 measurements of the number of children using literacy behaviors. These were then averaged for the 530 children in the 35 rooms. The average number of children who participated in literacy behaviors over the four observation days was .97, and the average number of literacy acts per room was 14.80 (*SD* 12.56) over 4 weeks representing a total of 503 literacy behaviors. Looking at reading and writing separately, the average number of children who participated in writing was .45, and the average number of writing acts per room was 7.02 (*SD* 7.31) representing a total of 239.60 writing episodes. The average number of children who participated in reading was .49, and the average number of reading acts per room was 7.76 (*SD* 6.99) representing a total of 264 reading behaviors.

Relationships Between Frequency of Literacy Behaviors in Free Play and Displayed Literacy Materials and Frequency of Literacy Behaviors in Free Play and Teacher-Guided Literacy Activities

Table 3 presents correlations indicating if positive relationships exist between the frequency of literacy behaviors during free play and the display and availability of

Table 3

Correlations Between Displayed Literacy Materials and Frequency of Literacy Behaviors During Free Play

	Writing	Reading	Total
1. Children's literacy work displayed	.05	.06	.05
2. Written messages displayed by the teacher for that day's work	.19	.28	.20
3. Displaying directions for ongoing activities	.05	.14	.03
4. Sign-on charts or sheets	.06	.10	.11
5. Number of books in the class	.41*	.64**	.56**
6. Number of different kinds of recording tools (pencils, crayons, etc.)	.63**	.58**	.67**
7. Number of different kinds of recording materials (paper, computer, etc.)	.60**	.62**	.67**
8. Print or writing materials related to nearby materials, objects, pictures, theme play	.43*	.44**	.47**
9. Books related to nearby material, objects, pictures, theme play	.55**	.62**	.63**
10. Books and print segments written in children's home language	.05	.35*	.21
11. Functional labels	.33*	.35*	.33*
12. Total score for survey	.43*	.69**	.60*

*$p<.05$, .33. **$p<.01$, .44.

literacy materials in the classroom. The data show 23 significant correlations between the two, 8 at the .05 level and 15 at .01.

Table 4 presents correlations to determine if there were positive relationships between frequency of literacy behaviors during free play and teacher-guided activities. The data show 26 significant correlations between the two, 6 at the .05 level and 20 at .01.

Analysis of Qualitative Data

Two detailed anecdotes describing literacy acts during play were collected from each of the 35 participating classrooms, then cooperatively analyzed by the researcher and observers to try to identify motivations for specific literacy acts. The following categories emerged:

1. Children often chose to engage in a literacy behavior based on real life experiences.
2. Children motivated or drew other children into literacy activities they initiated.
3. Children modelled teacher behavior, such as reading to others.
4. Children engaged in literacy acts as a result of lessons related to specific skill development carried out by the teacher, such as learning letters of the alphabet.
5. Availability of literacy materials in play areas motivated such literacy behaviors as hanging a sign on a block structure and writing a restaurant menu.
6. Function motivated reading and writing—for example, finding a friend's name on his or her cubby.

Table 4

Correlations Between Teacher-Guided Literacy Play Activities and Frequency of Literacy Behaviors During Free Play Over an 8-Week Period

	Writing	Reading	Total
1. Teacher read or told stories to children	.58**	.62**	.56**
2. Teacher provided time for recreational reading	.04	.20	.07
3. Teacher participated with children in recreational reading	.04	.07	.02
4. Teacher involved children in literature activities such as role playing stories, telling felt stories, and integrating literature into content area teaching	.40*	.57**	.53**
5. Teacher indicated literacy materials available for freeplay use, such as reading books, writing, etc.	.39*	.64**	.55**
6. Teacher modelled or participated in literacy activities with children during freeplay such as pretending to be a doctor and writing a prescription for a patient	.39*	.44**	.39*
7. Teacher suggests children participate in literacy activities during play	.33*	.34*	.35*
8. Teacher positively reinforced literacy behaviors during play	.53**	.76**	.70**
9. Teacher listened to and discussed children's literacy activities during play	.54**	.66**	.65**

*$p<.05$, .33. **$p<.01$, .44.

Most times one literacy act would be motivated by a combination of categories mentioned above. Life experiences were the most frequent in literacy play behavior as well as modelling provided by the teacher in school. The diversity, accessibility and quantity of literacy materials available was an important motivator. Children tended to engage in literacy activities along with other children rather than alone, and function was evident in some of the observations. Samples of anecdotes illustrating these motivating factors follow.

Role-Playing Real-Life Experiences With Available Materials

Colleen was playing house in the dramatic play area. She was the mommy, and she asked Kevin to be the daddy. They had a doll in the cradle. Colleen got a book and sat in the rocking chair facing the doll and Kevin. She pretended to read *The Three Bears*, although that was not the book she was holding. She rocked and turned the pages while telling the story.

Modelling Teacher Literacy Behaviors With Available Materials

Aaron had just built a school out of blocks. He called to his friend Ben to come over and look at it. He explained, "You see, Ben, this is a school. I used blue, yellow and red blocks. Now look in the window and I want you to see what it says. You see, it says 'Good morning, boys and girls.' " Aaron wrote this in scribble writing on a sheet of paper.

Materials Provided in the Classroom Motivate Children to Perform Functional Literacy Behaviors Based on Real-Life Experiences

The teacher created a Burger King in the dramatic play area with menus, play money, uniforms, cash register and an OPEN and CLOSED sign. Ricky turned the sign to read OPEN and began preparing burgers. Steven joined Ricky and seemed upset. He said, "See that sign that say OPEN." He flipped it over. "We're not opened. Now it says CLOSED. We need to clean up the place first before we open."

Children Motivated by Other Children's Modelling of Observed Literacy Behavior by Teachers or Adults With Available Materials

Jennifer and Patricia were in the library corner browsing through books during free play. Jennifer said, "I'm going to read this book." Patricia said, "You don't know how to read." Jennifer said, "Yes, I do," and began to pretend read. Patricia watched Jennifer for about a minute, then took a book from the shelf and also began to pretend to read. The two girls continued for about 10 minutes until free play was over.

Children Motivating Others in Literacy Behaviors Based on a Skill Lesson Taught by the Teacher

The letter of the week was "B." The teacher introduced it and asked the class to name things that began with B, then placed a cutout B on the table in the library center. One of the children proceeded during free play to the table. She traced the letter B while making its sound. Another child came over and they started naming things that began with the letter B. Two more children came over and began to name things that begin with B.

Teachers' Perceptions of Literacy in Play

The data reveal a limited number of voluntary literacy behaviors by children in the 35 rooms observed. However, there were also few teacher-guided literacy play activities and very few literacy materials displayed and available for use. Nevertheless, many of the survey items corresponded positively with children's literacy activities during play. Based on these findings, it seemed important to interview teachers concerning their attitudes about the purpose of play in the classroom since teachers' attitudes shape their curriculum. Could their attitudes about literacy in play affect their environmental and program plans for the classroom? Teachers were asked:

1. What do you see as the purpose of play in your kindergarten curriculum and why?
2. Do you think play is an activity by which to try to enhance reading and writing? Why? Or why not?
3. If you think literacy can be developed in play, explain how.

Table 5

Kindergarten Teacher's Perceptions of the Purpose of Play

Perception	Total
Social Development	
Learn to get along with peers	21
Learn to share with others	11
Learn to help others	1
Learn to take care of materials	2
Learn to solve problems	2
Total	41
Emotional Development	
Build self-confidence	1
Release pent-up emotions	8
Relax	1
Total	10
Physical Development	
Improves fine motor development	20
Improves gross motor development	17
Develops eye-hand coordination	5
Total	42
Intellectual Development	
Gain knowledge and insight through informal and dramatic play	10
Literacy Development	
Classification	1
Improve language	6
Learn auditory and visual discrimination	5
Learn left-to-right progression	1
Sequencing	1
Total	15
Math and Science	
Gain knowledge of math and science	15

Tables 5 and 6 present data collected from the 35 teachers questioned. It is apparent when reviewing Table 5 that social and physical development are the main purposes perceived for kindergarten play, with emotional, intellectual, literacy, math and science development mentioned less often.

Table 6 reveals that 9 of the 35 teachers felt playtime offered no opportunities to develop reading because the purpose of play was not direct instruction of skills. Those teachers who saw play as an opportunity for developing literacy for the most part suggested using reading readiness games to enhance auditory and visual discrimination, eye-hand coordination, and left-to-right progression. Language development through role playing was, however, also mentioned with some frequency.

Table 6

Kindergarten Teacher's Perceptions About Play as a Place to Enhance Reading and Writing

Perception	Total
1. Play is not a place to enhance reading since it involves direct instruction of skills which is not the purpose of play	9
2. Play can develop reading and writing in the following activities:	
a. role play develops language	18
b. certain reading readiness games develop eye hand coordination	12
c. looking at books	6
d. listening to stories on tape	1
e. certain reading readiness games encourage the use of left to right progress	4
f. certain reading readiness games help with auditory and visual discrimination such as puzzles and lotto	10
g. using alphabet games	3
h. puppets help with language and creating stories	1
Total	55

DISCUSSION

Results of this study indicate that (a) classrooms were not designed to facilitate literacy behaviors, (b) there were few literacy materials readily available for use during play, (c) teachers did not especially seek to engage children in voluntary literacy activities during play, (d) teachers did not extensively model or facilitate literacy activities, and (e) teachers did not in general promote the possibilities of play as a means toward literacy development. Anecdotes indicated that, throughout the study, literacy behaviors during play were for the most part motivated by materials available for use in the classroom and by children modelling real-life literacy experiences and emulating teacher behaviors.

Teachers involved in the study perceived play mostly as a means for developing social and motor skills. Except for language development, they gave literacy learning little priority in play; in some cases teachers felt literacy development had no place at all in play. It appears that they lacked an understanding of emergent literacy constructs, retaining instead the concepts and practices of traditional reading readiness exercises in eye-hand coordination, left-to-right progression, and the like. Based on the results of this study, teachers must be reeducated to the constructs of emergent literacy, which sees play as a setting in which certain literacy development not only occurs naturally, but can be encouraged by placing literacy materials in play areas and providing guidance and directions for using them.

Although the investigation demonstrated that literacy materials and certain teacher activities can be strong predictors of voluntary reading and writing activities in free play, the data are correlational. One might be cautious in inferring a cause-and-effect relationship. It is possible, for example, that a teacher's enthusiasm plays a key causal role, and that literacy materials and activities in play are simply other manifestations of this variable. On the other hand, interpretation of the present data as indicating cause-and-effect receives support from recent investigations by Morrow (1991), Neuman and Roskos (1990), and Vukelich (1990), in which manipulation of the environment, placing literacy materials in play areas, and guidance and modelling by teachers increased the number and types of reading and writing done by children during free-play periods. Based on the findings of this investigation and others, teachers also should provide themed settings in dramatic play areas, including materials for children's reading and writing. Children tend to reenact real-life situations; if literacy materials are available in appropriate settings, literacy behaviors should increase. Some suggestions for themes and literacy materials to add to dramatic play areas include the following:

1. A newspaper office yields writing paper, telephones, directories, maps, typewriters, computers, and areas that focus on sports, travel, general news and weather.
2. A post office to serve for mailing the children's letters would need paper, envelopes, address books, pens, pencils, stamps, cash registers, and mailboxes. A mail carrier hat and bag are important for delivering the mail by reading names and addresses.
3. An airport can be created with signs posting arrivals and departures, tickets, boarding passes, luggage tags, magazines and books for the waiting area, safety messages on the plane, and name tags for the flight attendants. (Morrow & Rand, 1991)

Although research in the relationships between literacy development and play is in its early stages, studies have shown improvement in literacy skills due to certain play experiences (Pellegrini, 1983; Schrader, 1988; Silvern, Taylor, Williamson, Surbeck, & Kelly, 1986). It is apparent that children's voluntary reading and writing can be increased during play. We need to continue to study the effects of literacy development that might result from increased participation in literacy activities during free play.

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THE EFFECTS OF "STORYBOOK PARTNERSHIPS" ON YOUNG CHILDREN'S CONCEPTIONS OF STORIES

Susan B. Neuman and Cathleen Soundy
Temple University

Studies of emergent literacy suggest that children's independent engagement with favorite books is one of the most significant factors in their developing conceptions of stories (Cochran-Smith, 1984; Harste, Woodward & Burke, 1984; Schickedanz & Sullivan, 1984). Almost as soon as young children become familiar with particular books, they begin to play with them in reading-like ways. Research has demonstrated that through this reading-like play, young children develop strategies that rapidly become picture-stimulated, page-matched, and story-complete (Lass, 1982; Yaden, Smolkin, & Conlon, 1989).

Much of the research on storybook readings has focused on young children's playful attempts to recall pleasurable book experiences in the course of listening to stories being read to them by their parents (Heath, 1982; Ninio & Bruner, 1978). Through task assistance from a parent, the child attempts to make sense of text by interpreting written language based on past experiences and beliefs (Teale, 1984; Vygotsky, 1978). Eventually, as the parental scaffolding diminishes, the child begins to internalize such behaviors and can function independently. This description is consistent with Vygotsky's (1978) notion of the zone of proximal development.

There are many children, however, particularly in lower socioeconomic communities, who are not read to on a frequent basis. Differences in interactive behaviors, vocabulary, and problem-solving skills in the acquisition of literacy skills have been linked to the lack of these early book-reading experiences (Heath, 1982; Neuman, 1986). To provide some assistance, a number of studies have examined the potential effects of teachers modeling parental interactive behaviors in frequent one-to-one settings in classrooms (Morrow, 1988, 1989). This approach, though powerful, is extremely difficult to implement in typical classroom settings where most teachers are unable to individualize storybook readings to young children.

In contrast to this approach, this research was designed to analyze whether children's interactions with stories might be enhanced through their collaboration with more capable peers. Though different than the carefully guided graduated assistance implicit in the zone of proximal development, peer collaboration might offer opportunities for children to actively respond to literature, simulating the more intimate and more interactive encounters with literature that typify parent-child exchanges. Further, in attempting to resolve differences in interpretations of stories, children may extend their understanding of the key elements which underlie a story's structure.

With these considerations in mind, the purpose of this study was to examine whether young children's playful engagement in storybook reading with other children may influence their conceptions of stories. Specifically, the study was designed to answer the following questions: (a) Does cooperative storybook reading improve children's ability to dictate stories conforming to a basic story structure? and (b) What is the instructional potential of cooperative storybook reading for young children?

METHOD

Subjects

One hundred children from two kindergartens ($N = 45$) and two first-grade classrooms ($N = 55$) from an urban school district participated in the study. The school served families from a number of ethnic backgrounds and varying socioeconomic groups. Subjects were 67% Caucasian, 19% Black, and 14% Asian.

Test Measures

Prior to the treatment, two measures were administered. First, all subjects were given two subtests of the Metropolitan Readiness Test (MRT) (Nurss & McGauvran, 1976) in a group setting to measure symbol recognition and comprehension: finding patterns and listening. Classrooms from each grade were then randomly assigned to treatment and control groups. *T* tests indicated no significant differences between treatment and control groups in kindergarten ($t = 1.20$,. $df = 43$, n.s.) or in first grade ($t = .99$, $df = 53$, n.s.).

Second, a picture sequencing activity was constructed to measure children's conceptions of a story. Twelve black and white laminated picture cards ($3\frac{1}{2}'' \times 5''$), composed of three story sets of four pictures each, were selected. The three story sets, containing distinct topics in sequence, included a boy playing with his dog, children making a tree house, and carpenters constructing a building.

Children met individually with one of the investigators. All 12 cards were randomly placed on a table. Each child was asked to select four pictures, place them in order, and tell a story. If hesitant, the child was prompted with a question, "Can you tell me a story? What is your story about?" All responses were audiotaped and later transcribed for analysis. The same procedure was used as a posttest measure.

Procedure

Children in each treatment classroom were paired to form "storybook partnerships." To the extent possible, child dyads were arranged to include a high achiever and low achiever as measured by the Metropolitan Readiness scores. The object of these pairings was to encourage those who might be more competent in reading to assist their less capable peer in an informal teaching context. These partnerships were to remain the same throughout the treatment period.

Using teacher modeling, procedures for story partnerships were described and enacted in the treatment classrooms. Each child was first asked to select a storybook from the classroom library and look over it carefully to make sure they might enjoy reading it. For the purposes of the study, only fiction books were included in the library; books that merely labeled objects or nonfiction books were replaced with favorite storybooks, including *Madeline* (Bemelmans, 1939), *Curious George* (Rey, 1941), and *Corduroy* (Freeman, 1964).

During the 15-minute recreational reading period, one of the partners was to assume the role of the designated reader, reading her book to her partner. Though many of the children might be considered "preconventional" readers, they were encouraged to pretend to read "as if their teacher might be reading them a story." Rather than ask for adult assistance, they were invited to simply invent or guess at unrecognizable words. In this respect, storybook partnerships attempted to encourage children to "play" with reading. Instead of laboriously reading each word on a page in a monotone voice, they were reminded to capture the attention of the listener by asking questions, pointing to pictures, and encouraging the listener to make predictions about what may come next. Finally, throughout the demonstration, children were encouraged to develop a spirit of camaraderie with their partner; this was a time for friends to informally read a self-selected book together and to help each other in the process.

These procedures were first described to the children and then followed by asking one of the children to participate in a demonstration of the storybook partnership. Here the investigator first modeled the procedure by reading, asking questions, and pointing to the pictures, and then asked the child partner to do the same. Children were encouraged to ask questions following the modeling procedures.

Children were told that during most sessions both partners would likely be able to share their books; however, they were cautioned that on some occasions only one book might be read during the period. At these times, children were to alternate the role of the designated reader in subsequent sessions.

Control groups in the kindergarten and first grade continued to engage in their regularly scheduled 15-minute sustained silent reading (SSR) period. During this time, children read silently at their seats with no interruptions. There was no sharing of books following the SSR period. Teaching interactions in both conditions were minimal.

Five-minute observations of interactions between designated storybook partnerships were conducted on a daily basis. One of the investigators observed and recorded all comments and questions children raised during their joint story readings. These observations were designed to provide some qualitative impressions of the instructional potential of these storybook partnerships and to determine the effectiveness of the modeling procedures.

The study was conducted over a 6-week period, with the first and final weeks used for data collection. In all, 20 daily recreational reading sessions were conducted for both treatment and control groups.

Data Analysis

Transcriptions of children's pre- and posttest story dictations were evaluated for two oral language measures: number of idea units and story complexity, as measured by the number and type of story structural elements present in their oral dictations. Each protocol was divided into idea units, defined as a proposition containing at least one relational concept and one argument (Neuman, 1990). Story complexity was measured using an adapted version of Morrow's evaluation of story structural units (1986) as described in story grammar research (Mandler & Johnson, 1977; Rumelhart, 1975). Each child's story was examined for inclusion of setting, theme, plot episodes (affecting a character and an event), and resolution. One point was given for each story element; scores could range from 0, indicating no structural elements present, to 5, indicating that all were mentioned. To determine reliability, two evaluators independently scored the same 10 story dictations. Interrater reliability on the number and type of structural elements present was .90 and .95, respectively.

To measure the effects of storybook partnerships, differences between treatment and control groups were analyzed using analysis of covariance, with pretest story dictations and grade serving as covariates. Dependent measures included the number of children's idea units and story structural elements present on posttest dictations. Following this analysis, data were analyzed using a 2 × 2 factorial design, with treatment (storybook partnerships vs. SSR) and grade (kindergarten vs. first grade) as factors to examine possible interaction effects of treatment and grade level.

In addition, dialogue samples from 60 partnership interactions (3 observations per session × 20 sessions) were qualitatively examined to determine the instructional potential of storybook partnerships. Of particular interest, peer exchanges were analyzed to determine whether children's comments and questions focused on the storybook activity itself, or represented off-task behaviors.

RESULTS

Analysis of covariance indicated no significant differences between treatment and control groups on the number of idea units dictated on posttest stories ($F(1, 95) = .99$, $p <$ n.s.). However, scores on the number of story structural elements indicated that the experimental group scored significantly higher than the control ($F(1, 95) = 4.41$, $p < .05$). These results indicate that children who engaged in storybook partnerships were more likely to dictate original stories conforming to the basic structure of a story than those students who continued to engage in sustained silent reading. Table 1 presents the adjusted means and standard deviations for each dependent variable.

Table 1

Posttest Means and Standard Deviations for Story Dictation Analysis

	Idea Units		Story Structural Elements	
Group	*M*	*SD*	*M*	*SD*
Storybook Partnerships	8.84	3.90	2.63*	1.08
SSR (Control)	7.63	4.30	2.21	1.49

*$p < .05$.

No significant interactions between treatment and grade level were reported for number of idea units or story structural elements. Storybook partnerships appeared equally effective for children at both kindergarten and first grades.

Children's questions and comments during storybook partnerships were then qualitatively examined to analyze how these interactions might enhance children's sense of story. A total of 308 informal exchanges in the 60 observations were recorded. These exchanges were counted and coded by the two investigators in four categories: commenting, questioning, labeling, and extraneous or off/task behaviors.

Over 48% of these exchanges were *comments* related to interpreting text. The following example describes two boys "reading" *The Biggest Fish in the Sea* (Ipcar, 1972):

> Mercury: He caught the biggest fish.
> Paul: No that looks like a great white shark. Man, why do they get gigantic and bigger and bigger every time!
> Mercury: What do you think happened to the gold fish . . . the medium fish. Is he going to eat it?
> Paul: Yes.
> Mercury: He's a piggey wiggey.
> Paul: He (the fish) is so big he could eat you!
> Mercury: I know . . . This one could eat the school!
> Paul: I know.

In this example, the children seem to extend their interpretation of the story by going beyond the immediate text.

Children's *questioning and labeling*, representing 13% and 14% respectively of total exchanges, were often brief, integrated in the child's reading of a story. For example, as Nocoletta was reading the story, *Corduroy*, to Rachel, she would stop and ask, "What is the bear doing now?" Similarly, labeling comments were often brief inserts, such as "this is a clown, doll, bear," in the context of continuing to read the story to their partner.

However, there was also a good deal of *off/task behavior*. In cases where children did not attempt to engage their partner, or they did not particularly enjoy the story, exchanges would turn to unrelated activities, such as "Wanna go with me to the park today," and "Yeah, let's play cops." Over 25% of the exchanges represented such extraneous comments. This high percentage suggests that informal monitoring techniques by the teacher, ensuring that children are engaged in high interest reading materials, might further increase the instructional potential of storybook partnerships.

CONCLUSIONS

The results of our study suggest that storybook partnerships significantly affected children's conceptions of stories, as measured by their increased use of structural elements in oral dictations. Through this technique, children had the opportunity to informally interact with others, extending, questioning, and labeling elements in favorite stories in a playful, informal atmosphere. In this respect, the storybook partnership technique stands in contrast to the traditionally quiet sustained silent reading period in most classrooms. Here, children were encouraged to converse freely, to "play" with words, to make up meanings of stories if need be. Further, the partnership arrangement, over the course of a 4-week period, allowed for children of differing ability levels to form a helping relationship with each other, as Nina demonstrated when reading with Anastasia, "What's this word?" reminding her "C'mon you're my partner, you're supposed to help!"

As a recreational reading strategy, storybook partnerships provide a potentially powerful approach for promoting literacy as a social process. According to Vygotsky (1978), learning occurs in a social context through guided performance of emerging skills from more capable peers. Children from diverse language and cultural backgrounds may particularly benefit from such an approach. By reciprocal engagement in reading, children have greater opportunities to respond to stories, increasing the amount of time spent speaking, listening and acquiring language competence. In doing so, teachers are facilitating an environment in which learners become actively involved in their own learning. As a generative reading strategy, storybook partnerships may have direct beneficial consequences on children's learning and enjoyment of stories.

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LITERACY LEARNING IN WHOLE-LANGUAGE CLASSROOMS: AN ANALYSIS OF LOW SOCIOECONOMIC URBAN CHILDREN LEARNING TO READ AND WRITE IN KINDERGARTEN*

Karin L. Dahl and Penny A. Freppon
University of Cincinnati

Although whole-language classrooms in the early grades have been described in terms of teacher actions and learner activities, few studies have investigated whole language from the perspective of the learner. This ethnographic study undertakes such an analysis and focuses on urban children from economically poor families, a population which has experienced disproportionate rates of failure in American public schools (Ogbu, 1985). The study is part of a 2-year investigation of learner sense making in reading and writing in whole-language classrooms and builds on an earlier investigation which analyzed knowledge construction by the same urban population in skills-based classrooms (Dahl, Purcell-Gates, & McIntyre, 1989). Results from this previous research indicated a general pattern of inexperience with written language at the beginning of kindergarten for most learners and a frequent mismatch between the predetermined skills-based curriculum and learner understanding. Kindergarten children who failed to grasp written language as meaning-centered struggled to make sense of the reading and writing skills that were taught.

The purpose of the current study in whole-language urban classrooms was twofold, given these previous results. Centering on the learner's perspective, it first investigated knowledge construction in reading and writing in whole-language kindergartens by taking learner patterns of behavior as evidence of hypotheses or sense making. Second, it began the process of documenting contrasts in learner patterns of behavior during reading and writing across skills-based and whole-language classrooms. Ultimately, the comparison will expand to include data from both studies using kindergarten and first-grade information.

A critical aspect of the current investigation was the definition used to identify whole language in these kindergartens. Whole language was taken to mean classrooms in which (a) oral and written language were learned primarily in meaning-centered and functional ways, (b) the cuing systems of language were present and interacting in any instance of language use (Altwerger, Edelsky, & Flores, 1987), (c) language itself occurred and had meaning in context, and (d) reading and writing were learned from whole to part by engagement in the processes themselves (Buswinka, 1989; Goodman, 1986).

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METHOD

Site Selection

The selected sites were from two midwestern school districts with predominately low-socioeconomic children. Data documenting characteristics of school populations were gathered from school records and interviews with school administrators. This documentation included free lunch participation and school mobility rates. In both schools more than a majority of children (61%) participated in the federally funded free or reduced lunch programs. The mean mobility rate for the schools was 58%. In the current investigation one site had a predominately white population which shared a background of Appalachian migration into the urban community. The other school was located in an urban community approximately 70 miles to the north and served an urban population which was predominately African American.

A three-pronged strategy was used to verify the whole-language designation for each of the classrooms (Freppon, 1988). First, a teacher interview was conducted in which teaching philosophy for reading and writing and view of learning and curriculum were ascertained. Second, each teacher was given the *Theoretical Orientation to Reading Profile* (TORP) and the score was compared with a whole-language range (DeFord, 1985). And third, preliminary classroom observations were made with attention to the nature of the learning environments including materials used, grouping practices, instruction, and literate activities available for students. Although the kindergarten teachers in the two sites differed in their instructional style and routines, the curriculum in both classrooms provided learning environments considered to be whole language (Bergeron, 1990; DeFord, 1984). The daily kindergarten routines included themed units of instruction centered on children's literature, opportunities for children to read and write independently, and story reading times with the teacher. Both sites provided teacher demonstrations of reading and writing and geared instruction to the needs of young children.

Informants

A sample of 24 children was randomly selected from the pool of learners who qualified for the federally funded free lunch program. This sample of learners (Sample One) was balanced for gender and race. Learners in this sample were given an array of tasks assessing entering written language knowledge. Next, from Sample One, a subsample of 12 children was randomly selected to serve as focal learners. These 12 children (balanced for gender and race) were studied closely in order to gather more detailed and comprehensive information about sense making. The function of the larger sample was to provide a potential bank of informants from which additional focal learners could be identified in the event that a focal learner moved to another school. It also provided more reliable information about entering written language knowledge for this population.

Procedures

At the beginning of the kindergarten year an array of five tasks representing written language knowledge were administered to the sample of 24 children to document their entering schemata. Included in these tasks were assessments of (a) the intentionality of print, (b) story structure, (c) written register, (d) alphabetic principle, and (e) concepts of print (Clay, 1979). A sixth area of knowledge, conceptions of writing, was drawn from the tasks requiring production of writing. Each of these tasks was scored using the procedures developed in the previous study (Purcell-Gates & Dahl, 1991).

Data Collection

During the kindergarten year, the two researchers gathered field note and classroom data during twice weekly observations of the half-day kindergarten sessions. Observations took place from October through May with the researchers logging 224 hours of documentation in the two classrooms. Each classroom visit entailed close-proximity observation of one focal learner. The researcher sat physically close to the child being observed and on occasion probed by asking the learner to tell about his or her work. Using a remote microphone and tape recorder, the spontaneous utterances of the focal learner were recorded. Field notes written during the observation included detailed accounts of focal learner actions, descriptions of teacher behavior, and details about the contexts in which learning events took place. After each observation, transcripts from learner audiotapes, original field note accounts, and copies of all learner papers were integrated into an elaborated version produced by the researchers. Thus, the elaborated field notes contained all the data captured in one classroom visit: focal learner utterances, actions, responses, and artifacts.

Data Analysis

All elaborated field notes were analyzed jointly by both researchers. Codes emerged with each review of field notes, and six general classifications of activity were identified including: using print meaningfully, stating metalinguistic understandings, recognizing print conventions, demonstrating reading behaviors, displaying writing behaviors, and handling books. Each activity or learning event also was coded for the context in which it took place. Four context codes emerged: learner sponsored, learner collaborative, teacher sponsored, and teacher scaffolded. Continued review of codes led to consolidation, and recoding occurred as the year progressed. More than 1,500 learner activities were coded. The codes captured the four contexts, and 71 learner behavior codes were used within the six categories. Data analysis also included scoring of children's written language tasks. To avoid bias in classroom observations, these tasks were scored at the end of kindergarten. To check for soundness of the ethnography, data gathering and analysis procedures were audited by an outside consultant. The two day audit included classroom observation and a review of field note production and subsequent coding activities.

Once coding of learner behavior was underway, it was evident that the individual learner's approach to literacy activities contributed to his or her knowledge construction. Additional data analysis was conducted to capture such learner patterns. Categorized as *learner stance*, these behavior patterns included: (a) quantity and quality of engagement, (b) degree of independence/dependence toward instruction (including risk-taking), and (c) attitude and motivation. Risk taking was taken to mean attempts to read or write in new ways or with new materials. Elaborated field notes were culled for evidence of learner stance, then stance groupings were determined on the basis of a year of coded data. The following example of learner reading behavior is representative of evidence used to identify stance.

In this pattern, the learner established a routine of sustained engagement with texts while working alone. With rapt attention she reread the same storybooks each day. These successive rereadings included experimentation with new reading strategies. This pattern suggested an *independent* approach to literacy activities, a propensity for *risk taking*, and sustained *motivation* toward learning to read.

Further data analysis across learners was carried out with the construction of a grid that included all categories of data: learner, learner stance, site, entering knowledge, recurring hypotheses related to written language, and context of learner activity. Once data for each learner were entered into the grid, comparisons were made across learners and across domains.

RESULTS

Entering Knowledge of Written Language

Assessment of the children's knowledge of written language across the range of tasks indicated that these 24 children held a restricted view of written language. The mean scores on each written language task are shown in Table 1.

Mean scores for the children in the previous skills-based study were: intentionality 2.91, story structure 3.37, written narrative register 23.54, alphabetic principle 1.28, concepts of writing 3.66, and concepts of print 6.67. Comparison of scores from the previous study and the present investigation show that the children in both studies were similar in entering written language knowledge.

Site Similarities and Differences

At the beginning of the kindergarten year, researchers recorded similar classroom activities across the two sites. Both teachers emphasized reading to children and the importance of children being able to self-select books. In both sites the curriculum provided opportunities to learn about the intentionality of print, engage with reading and books, and become comfortable with schooling. Some opportunities for children to write were also present in both classrooms.

By late autumn, however, differences between the teachers' instruction were becoming clear. There were differences both in the amount of direct instruction across the two sites and in the amount of time that children spent engaged with reading and writing. Further, in Site Y the teacher emphasized concepts about the "innerworkings" of print (Dyson, 1982) and provided demonstrations of writing. Instruction in

Table 1

Pretest Mean Scores for Written Language Tasks

Task	Site X ($n = 12$)	Site Y ($n = 12$)	Mean for Both Sites
Intentionality (1–5)	2.50	2.41	2.43
Story Structure (1–8)	4.91	3.33	4.12
Written Register (0–90)	17.00	17.00	17.00
Concepts of Writing (1–6)	3.25	3.18	3.21
Concepts About Print (0–24)	7.00	6.58	6.79

Site X, in contrast, focused on learner exploration of reading and writing and emphasized learner choice.

Stance Designations

Analysis of learner stance indicated three general patterns across focal learners. Each pattern described a cluster of recurring behaviors that characterized a particular approach to literary activities:

1. Stance A. Need for teacher's instruction and a cautious or negative attitude toward literacy activities. Limited risk-taking.
2. Stance B. Attentive engagement in activities with written language. Dependent on teacher or peers for new concepts. Reluctant to experiment with unfamiliar reading or writing.
3. Stance C. Intensely engaged in literate activities. Confident and willing to experiment independently. Presence of personal agendas for learning about reading and writing.

Sense-Making Patterns

The following data narratives describe representative patterns of sense making for each of these stance designations. The descriptions show recurrent learner patterns of action that indicate knowledge construction and learner perspectives.

Sense-making patterns for Stance A learners. Stance A Group included exclusively learners with low entering knowledge scores across the measures of written language. The initial task for these children who were the least knowledgeable about written language was simply learn what to do in school settings. At the beginning of kindergarten, the learners in Stance A primarily stood around and watched other children or wandered around the room. For example, Wesley usually stood on the fringes of the group and watched what other boys were doing, occasionally joining their activity. Cassie spent most of the kindergarten sessions watching others and attempting to interact with small groups of girls.

In the early part of the kindergarten year the Stance A cluster of learners also exhibited consistent dependence upon the teacher. Some only participated actively in reading and writing events when the teacher structured and directed the activity. All of the learners in this grouping were more active later in the year after gaining social acceptance and learning the routines of their classrooms.

The reading behaviors demonstrated by these learners were similar to those described by Sulzby (1985) as characteristic of emergent readers. When these children read independently, they followed the action in the story by Labeling and Commenting (Sulzby, 1985). They often used oral language-like voices and sometimes used reading intonation when engaged with books. When the teacher read aloud to the class, they intermittently mouthed the words of the story and moved in and out of attending to it. As the children's repertoire of early reading behaviors expanded, they memorized more and more stories and began to notice words and attend to print.

In writing the children primarily wrote letter strings and then assigned meaning to their writing. They imitated the writing behaviors of others and sometimes copied the print around them. These children did not indicate understanding of the alphabetic principle when working independently. However, they were often able to identify letter-sound relations when the teacher worked with them individually. For example, Derek was a focal learner who rarely chose to write independently. On the rare occasions when he did so his writing consisted of strings of letter-like forms in circle shapes. In contrast, when his teacher sat with him and asked questions about the sounds he heard in specific words, his responses showed some understanding of the alphabetic principle. In one episode he wanted to write "I got stitches in my head," and with teacher support and a chart to show letter formation he produced *I t C N m D*.

In general, learners in this group appeared to end the kindergarten year with a clear understanding of the intentionality of written language and knowledge of storybooks. They had just the beginning of an understanding about writing.

Sense-making patterns for Stance B learners. Stance B Group included learners who demonstrated a variety of entering written language understandings ranging from those least experienced with written language to those who had some knowledge. In contrast to the Stance A learners, the children in Stance B participated more actively in the array of reading and writing activities available in their whole-language classrooms

Most learners in this cluster engaged in reading rather than writing during periods of free choice. They established routines of choosing familiar books day after day. They learned to memorize stories and incorporated some reading intonation when engaged with familiar books. Although instruction encouraged risk taking during reading, these learners showed a great enthusiasm for staying with the known. For example, in free-choice time Eundre arranged daily book routines with a small group of friends. Each day they chorused the memorized text of certain favorite big books even though their teacher encouraged reading exploration with new books and partner reading with charts, poetry, and songs.

Writing behaviors varied for this cluster of learners and ranged from copying words in the classroom environment to scribbling and assigning meaning. Julie, for example, learned to copy from a variety of sources. She copied from other children's writing and from the signs in the classroom. She even attended to spatial relations, carefully placing the word *Drill* directly under the word *Tornado* just as it was on the classroom sign. This tactic seemed to function as a placeholder, and Julie gained confidence as she produced page after page of copied writing. Maurice repeatedly wrote letter-like forms shaped like upside-down uppercase Rs with extra lines. He also produced arrowhead-like forms in strings. When reporting the meaning of these print displays, he usually gestured generally in their direction and recited a formulaic sentence such as, "I love my Mom and Dad."

Since the progress of these learners in learning to read and write seemed contingent upon receiving individual help from the teacher or more proficient peers, the content of teacher-scaffolded episodes was significant and seemed to contribute to learners' evolving hypotheses. The Stance B learner who received extended teacher guidance about letter-sound relations generated invented spellings and read her own writing fairly regularly in the latter part of the kindergarten year. The other learners focused on reading primarily and began, in teacher-guided sessions toward the end of the year, to frequently explore new reading materials (library books and small Wright Group books). They also had an extended repertoire of known books which they recited using Picture-governed reading strategies (Sulzby, 1985). Isaiah, the most active of learners in this cluster, ended the year also using various Print-governed strategies. His reading patterns revealed his refusal to continue reading when he came to words he knew he did not know.

Sense-making patterns for Stance C learners. All of the children in Stance C Group entered kindergarten with some degree of written language knowledge. One learner showed understanding in all of the assessed areas including the alphabetic principle. The others had some understanding of writing, intentionality, and print concepts. The sense-making patterns of children in Stance C indicated intense engagement with reading and writing. From the start they were highly attentive to instruction and imitated the teachers' demonstrations.

These children moved into the second half of the kindergarten year showing clear progress toward conventional reading and writing and an increase in the quantity and quality of their interaction and experimentation with written language. In reading, for example, they used a variety of strategies; they participated in reading along with the teacher, moving in and out of carrying the lead. Their near conventional reading behaviors were characterized by slowing down, self-correcting, and stopping at unknown words. Two of the children engaged in Refusal, Aspectual, and Holistic reading (Sulzby, 1985). For example, when Chris read a version of *Old Mother Hubbard*, he read the text in a halting word-by-word fashion and then stopped completely when he came to the word *cupboard*. After pausing for a second or two, he said, "calendar" and continued reading.

The children in Stance C wrote their intended meanings in words and word-like groups, and in both writing and reading showed growing understanding of the "innerworkings" of print (Dyson, 1982). For instance, Ashley wrote *ILkMtR* by independently sounding out the words to express her intended meaning (I like my teacher.)

Throughout the year these children seemed to have their own agendas. From the start Ashley, the only child showing knowledge of both intentionality and alphabetic principle at the beginning of the kindergarten year, consistently chose writing when she had the opportunity. Chris, on the other hand, chose to read. He read frequently, used a wide variety of early reading strategies, and self-corrected using letter-sound understandings. Nathan exhibited growth in both reading and writing, though his understanding of letter-sound relations emerged most clearly in his writing. Shaneka primarily explored reading using a routine of repeated readings of the same books as she moved toward conventional reading.

Instructional Context and Learner Patterns of Behavior

Analysis of the context of specific learner activities also revealed interesting patterns with respect to instruction. When the activities directed by the teacher were contrasted with those chosen by the learners independently, it was evident that the activities were highly similar. For the most part, focal learners engaged in the same kinds of activities that were demonstrated by their teacher. Whole-language instruction in these kindergartens focused on reading and writing activities that were meaning-centered. Teachers discussed sense making when they read and wrote with children. Children's talk during independent literacy activities revealed that they also talked about sense making and the meaning they were constructing. For example, they asked each other, "Does this make sense?" as they were writing.

Comparisons Across Skills-Based and Whole-Language Studies

A series of comparisons were made across the kindergarten data of the skills-based and whole-language studies. Mean written language scores at the beginning of kindergarten by Sample One learners across the two studies were similar. Thus, learners in both studies entered school with limited knowledge of written language.

Comparison of skills-based kindergarten results and whole-language results (Dahl, 1989; Dahl, Purcell-Gates, & McIntyre, 1989) indicated that learner behavior patterns in both studies strongly reflected the curriculum that focal learners experienced. In the skills-based study learners focused on what the curriculum taught. When instruction focused on letters, they experimented with letters. Their actions included forming letters as shown on workbook pages and trying to select appropriate letters for pictured items on dittos. When instruction provided experience in reading, such as sight word lists or workbook pages with short sentences composed of sight words, they made various reading attempts. Learners guessed at the sight words and said the words they knew. Similarly, the whole-language learners engaged in activities that reflected their classroom experience. They chose storybooks that the teacher had demonstrated and memorized many of those stories, "rereading" them on their own. Children wrote letter strings in journals and talked about the meaning of their writing. In both studies there were learners who moved toward conventional reading during the kindergarten year.

One difference between the learner patterns across the two studies was that the learners in the skills-based study engaged in different kinds of literate activity depending upon the context in which they were functioning. In teacher-sponsored contexts they spent much of their time following the teacher's directions—copying letters, marking answers, and replying to teacher questions. In learner-sponsored contexts these learners explored various aspects of reading and writing, wrote their names, and handled books. Instead of answering questions, they asked them. No such contrast across contexts was evident in the whole-language study during the kindergarten year. Analysis of learner behavior across contexts indicated that learners in the whole-language kindergartens engaged in the same kinds of activity independently that they experienced with their teacher.

A second contrast reflected differences in the activities of the learners who were least knowledgeable about written language as shown on the entering knowledge measures. In the skills-based kindergartens these least proficient learners focused on letters and on standards of correctness or accuracy. There was, ". . . an interest by the lower achieving group in the details of written language rather than its functions (Dahl, 1989 p. 113). In contrast, their whole-language counterparts (Stance A Group) engaged in a more varied array of behaviors. They memorized stories and engaged with books using both oral language-like voices and reading intonation. They wrote letter-strings and copied from print sources around them. By year's end they appeared to understand that print carried meaning and was used to get things done.

DISCUSSION

The purpose of this study in whole-language classrooms was to document knowledge construction from the learner's perspective and begin the process of comparison across the skills-based and whole language studies. These findings represent the first year of the 2-year study, and thus must be viewed with some caution. It may be that patterns of learner behavior and differences among groups of learners evident at the end of kindergarten will not be as important when the first-grade data are taken into account.

With that caveat in mind, however, it does appear that several points can be made from the findings of the kindergarten year. In terms of the current study in whole-language classrooms, the emergence of stance groupings was of particular interest. These groupings suggested the complexity of literacy learning and indicated that from the learner's perspective learning to read and write was personal. It included individual approaches and responses to literacy activities as well as the cognitive aspects of beginning reading and writing.

Another element of interest was the importance of instruction for these low-SES urban learners. In both studies the nature of early school-based reading and writing experiences was critical. These learners demonstrated that they were strongly influenced by the curriculum. Further, many children demonstrated teacher-dependent patterns; they waited for teacher direction and responded when the teacher provided instruction. Clearly, the nature of teacher-structured or teacher-scaffolded activity in kindergarten played an important role in supporting the knowledge and understanding these learners had about reading and writing.

Further, it was interesting that children in both studies engaged in somewhat similar reading and writing activities when they had opportunities to work on their own. In learner-sponsored contexts they focused on the functions or communicative aspects of written language. These activities were like those demonstrated in the whole-language instructional settings, and thus it appeared that the whole-language curriculum was developmentally in accord with these urban learners.

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A LONGITUDINAL STUDY OF THE GROWTH OF SPELLING ABILITIES WITHIN THE CONTEXT OF THE DEVELOPMENT OF LITERACY*

Margaret Hughes and Dennis Searle
York University

Read's (1975) seminal study of the spontaneous writings of 3-to-6-year-old children demonstrated that children approach writing with a set of tacit hypotheses about the relationship between the phonology and orthography of English, and begin to "invent" spellings using their phonetic knowledge and familiarity with letters. Henderson and his colleagues (e.g., Henderson & Beers, 1980) added to understanding of the developmental nature of spelling, and provided a basis for Gentry's (1982) and Henderson's (1985) developmental spelling classification systems.

Recent studies of spelling seek to clarify the interrelationships of spelling, reading and writing development (e.g., Bear, in press; Henderson, 1990; Zutell & Rasinski, 1989). Considerable research supports Smith's (1982) suggestion that reading serves as a major information source for spelling. Good readers/good spellers carry many successful strategies from their reading into their spelling (Frith, 1980). Zutell and Rasinski (1989) confirmed a strong relationship between oral reading ability and spelling development of third and fifth graders, with conceptual word knowledge underlying both. Henderson and Templeton (1986) described spelling as pivotal to reading and writing, proposing that "progress [in spelling] always entails word knowledge derived from reading and from applying the knowledge through purposeful writing" (p. 314).

Although desire to communicate successfully in writing is motivation for learning to spell (Smith, 1982), the exact relationship between writing and spelling is unclear. Radebaugh (1985) provided valuable information about strategies used by good and poor spellers for dictated words and sentences, but there is a lack of information about whether learners use the same repertoire of strategies across spelling tasks.

Spelling growth, it would seem, is at least partly a product of reading and writing experiences. What is less clear is how reading and writing development may be affected by spelling. Moreover, although the developmental nature of spelling has been well documented, there is still a need to know more about what prompts a learner to move from one stage to the next, or why all children do not become correct

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spellers. More longitudinal data is needed to clarify whether poor spelling is arrested development or different development.

This study in progress addresses the following questions: (a) What is the nature of spelling development over time, and are there differences and similarities in development of good and poor spellers? (b) What is the relationship between spelling development and reading and writing development? and (c) What strategies do children use in different spelling contexts, and how is this related to instruction? This report focuses on question (a) and on the reading-spelling relationship implied in question (b).

The special contribution of this study derives from its longitudinal nature and its qualitative perspective. This approach complements current research by allowing observation over time of reading, writing, and spelling interactions in natural settings, facilitating an emphasis on processes, providing richly descriptive data, and incorporating the perspectives of all persons involved in the process, including teachers, parents, researchers, and the child.

METHOD

Setting and Participants

This study is following two groups of children from mid-kindergarten to Grade 5. The children attend two schools selected according to the socioeconomic and multicultural nature of families served, literacy programme offered, and stability of population. The first school is located in a large city and serves an established neighborhood of urban professionals. Ethnicity is quite homogeneous, and English is the first language in most homes. The second school is located in a suburban area of newer, affordable homes outside the same city and serves mainly nonprofessional families whose ethnic background is extremely varied. Most parents and some of the children have immigrated to Canada, and for over half the participants, English is not the only language of the home.

Beginning in kindergarten, both schools provide frequent opportunities for children to engage in literacy-related activities. Regular, frequent visits to the school library are an important part of all classroom programmes. Children write daily, usually on personal topics, for periods of 40 to 60 minutes including conferences with teachers and peers and regular in-class sharing. Each day all teachers read to the class twice, and a period is scheduled for personal reading. Trade books or basal readers are used for individual or small group reading instruction and whole-class choral reading plays a major role in all first-grade classrooms. School 2 supplements personal reading time with a "partners" project in which every second day each child reads with an older student. No series-based spelling programme is used in the primary grades in either school, and only two teachers at that level periodically give word list tests. In first grade, teachers encourage "sounding out," give short individual or small group lessons on phonological features, and help children edit final drafts. In second grade, all children regularly record their personal spellings in their own word books, and the short spelling lessons extend to morphological features. From third grade on, in School 1, word-list tests and word-study lessons, tasks, and games become a regular weekly part of each classroom programme for approximately 1 hour each week.

School 1 classes are organized in heterogeneous family groups in which children are assigned to the same peer-teacher grouping for two consecutive grades. Participants were distributed amongst three classrooms in kindergarten, five in Grades 1 and 2, and four in Grades 3 and 4. In School 2, children are assigned to heterogeneous, single-grade classrooms and were distributed among three classrooms in kindergarten, four in first grade, and five in second grade.

In School 1, a sample of 24 children (12 boys, 12 girls) was selected from the senior kindergarten population. A pool of students generated by random sampling was presented to the principal and kindergarten teachers who were asked to determine whether that group was representative of the range of abilities and backgrounds in the school, and whether their families were likely to leave the area. Replacements were selected from a randomly generated list of alternates with a view to creating a representative group. In School 2 the same procedures were used, except that we selected four additional boys. In the 1990/91 school year the School 1 group (now 10 boys, 9 girls) is in fourth grade and the School 2 group (now 14 boys, 9 girls) is in second grade.

The academic diversity of our sample has been confirmed. Currently, in School 1, 5 girls are receiving special programmes for the academically gifted outside their regular classrooms (one full-time and the others 1 day each week). Also, 4 boys are receiving remedial help (2 on a 40-minutes-daily withdrawal basis, and 2 in a full-time Learning Disabilities class). Currently, in School 2, 5 children are identified as needing remedial help and 3 as needing English as a Second Language assistance. All special help at this point is either within the regular classroom or on a 40-minute withdrawal basis each day. Identification of gifted children will be completed at the end of third grade in this school.

Data Collection

Data are collected and examined for patterns of development and emerging relationships in five areas: (a) information about the children's background in language and literacy development is obtained through teacher and parent interviews and Clay's (1979) protocols for Concepts About Print Tasks and knowledge of alphabet; (b) development in spelling is monitored by having students list their known words, through spelling performance on research-generated word lists and dictated paragraphs, analyses of misspellings in classroom writing samples, through in-process interviews with the children about their spelling strategies, and teacher interviews about their perceptions of spelling development; (c) data on relationships between spelling development and writing development include analyses of weekly classroom writing samples of work in all subjects, classroom observation of writing time including in-process interviews about composing strategies, teacher and parent interviews to gather their perceptions of writing development, and a writing folder review with each participant; (d) data on relationships between spelling and reading development include analyses of reading strategies in familiar and unfamiliar texts, interviews with children about reading beliefs, interests and habits, and parent and teacher interviews to gather perceptions of reading development; and (e) information about relationships of spelling development to instruction is gathered through classroom observation of teacher-learner literacy events, and teacher interviews about programme.

Data are collected yearly in each school in three 6-week periods. Teachers are interviewed about their programme early each year and about student progress at the end of the year. Parent interviews are scheduled in the second and fifth year.

Data Analysis

This qualitative study uses a modified analytic induction approach to data collection and analysis in which data are "collected and analyzed to develop a descriptive model that encompasses all cases of the phenomenon" (Bogden & Biklen, 1982, p. 66). An attempt is made from earliest data collection to describe and explain a phenomenon, and this serves as a working hypothesis to apply to new data. The researchers look for instances that will challenge the working hypothesis and modify and reformulate to accommodate instances inconsistent with the initial formulation.

In such an approach, questions of reliability and validity rely not on the employment of specific procedures, but on the quality of the interpretation provided and the ability of others to share that interpretation (Smith & Heshusius, 1986).

The following description is intended to illustrate the analytic process used to arrive at interpretations reported in this paper, although such a linear description does not capture the recursive nature of the process.

Analysis began during initial data collection in School 1 as the researchers noticed recurring events. For instance, only a few children commented that they "could not spell" when asked to write the dictated words, there were common patterns of misspellings (e.g., there were seven instances of NIS and four of NAS in the spelling of NICE), and "sounding out" was a recurring explanation offered by children when asked how they spelled words. Such initial observations were confirmed as the researchers went through the process of recording and describing data derived from dictated word lists, classroom writing samples, and in-process interviews, first for each individual and then across participants. During this process both researchers independently looked for patterns and relationships in spelling development and then met to discuss, test, and refine emerging interpretations, making constant references back into the data to ensure that interpretations were well-grounded.

A key working hypothesis that emerged was that spelling development could be classified into stages. Although the use of a stage classification of spelling development is now fundamental to this study, we did not begin with a commitment to such a concept. The data suggested that the ability to recognize and then represent phonemes is an important factor in spelling growth. This appeared to confirm the classification system which Gentry (1982) had developed and, because this system was descriptive in nature and unelaborated, it seemed a useful working model for a more detailed description of spelling development.

More analysis occurred as personal files were built, each containing data on concepts about print, on reading and writing development, and on spelling progression. Interpretations were developed task by task so that progress in reading, for example, was first considered independently of progress in spelling. Again, working hypotheses were generated to explain how other literacy learnings (e.g., concept of word, fluency in reading) related to spelling growth. Interpretations were confirmed through a careful process of examining and reexamining all data relevant to a working hypothesis, considering alternative explanations, and collecting additional data.

The study is designed so that the second school can be used to confirm patterns and refine our perceptions by allowing us to collect more specific data related to these patterns. In working with the second school we were particularly interested to see that the central role of sound in early spelling was confirmed in a different population. We also began earlier to collect specific data related to concept of word, including a read-along protocol, as the first school data indicated that word concept was central to early spelling.

Independent procedures used to develop, refine and apply the classifications, continual reference to the data in the process of identifying relevant patterns, and use of the second school as a check on perceptions ensure that the description of growth which emerges is well grounded in the data (Glaser, 1978).

FINDINGS AND DISCUSSION

This report focuses specifically on findings concerning stages of spelling development and how progress through these stages relates to other aspects of literacy development.

Stages of Spelling Development

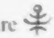
Data used to interpret stages of spelling are interviews with children about their spelling strategies and performance on the word lists, dictated paragraphs, and writing samples.

In determining a participant's spelling stage we did not simply use counts of correct spellings and categorized misspellings. Rather, we used characteristics of misspellings, features of correctly spelled words, and information about strategies provided by the children in interviews as they completed the tasks. We used this information to determine stage based on what approaches children characteristically used to generate new spellings. Correct spelling counts can be misleading because it became apparent that, in composing, some children used their set of known words repeatedly, so that with limited spelling knowledge they could produce stories with the majority of words spelled correctly. Also, letter-name strategies do, at times, result in correct spellings, and single correct instances of a more advanced spelling feature appear (e.g., silent "e") without the speller being aware of the underlying principle.

Gentry's (1982) classification system proposes that spellers progress through five stages from Precommunicative, through Early Phonemic, Phonemic/Letter-Name, and Transitional, to Correct Spelling. The general direction of spelling development proposed by Gentry is confirmed by our data, but our observations have suggested renaming one category and creating subcategories in others.

We have renamed Precommunicative spelling *Prephonemic* because we see an attempt by the speller to communicate, even though there appears to be no obvious relationship between the letters or letter-like shapes used and conventional spellings.

We observed that many children, even at this stage, appeared to be making rudimentary attempts at phonemic segmentation as the following dialogue illustrates:

MH: How will you write kiss?
JO: Ka, Ka, Ka.
MH: What *is* that letter? [JO muttered "ka" but wrote] What's that after Ka? Kiss. [I stressed "ss"]
JO: It must be a B. [JO wrote Bl, then added to his to form figure  .
(Nov. 6, 1987)

Early Phonemic spelling marks the beginning of phonemic representation. We observed two phases in this stage: Early phonemic I, representing only one phoneme, usually the initial or final consonant, but sometimes a dominant vowel sound, and then, in Early Phonemic II, moving to two phonemes.

ZA had interesting strategies at the Early Phonemic stage. In June of kindergarten he consistently represented each dictated word with three letters, usually in a consonant-vowel-consonant pattern, the first letter correct, the vowel letter *A*, and the final consonant unrelated to the correct form (e.g., VAC-view). As Table 1 shows, by November, ZA was representing two phonemes in each word, usually the initial and final sounds. He typically repeated the whole word and then the two prominent phonemes, a strategy we frequently observed in Early Phonemic spellers.

Phonemic or letter-name spelling appears to have three phrases, each a refinement of phonemic representation. Phonemic I begins when the child is able to segment a word phonemically and uses a letter-name strategy to create spellings. In one-syllable words, all phonemes are represented, usually in the correct order, but in two-syllable words, only three or four phonemes are represented, even though, orally, the child usually fully segmented the word. The representations may not be correct, but the substitutions for both consonants and vowels are phonetically predictable, given a letter-name strategy (e.g., REK-rag; NAS-nice; SECS-six). Children in the Phonemic II phase represent most, if not all, sounds in both one- and two-syllable words. Most consonants are spelled correctly but many lax vowels are still represented by phonetically correct substitutions (YALO-yellow; NIS-nice; SIKS-six). Phonemic III is characterized by increasing known spellings, examples of conventionally spelled consonants and lax vowels, often resulting in correctly spelled one-syllable words, and the inconsistent appearance of one, or two, visual features. For example, CN marked the long vowel correctly in NICE-nice, but not in GAM-game, and the double consonant in BAZZ-buzz, but not in KIS-kiss. In spite of evidence of a beginning awareness that something other than sound is involved in spelling, sound appears to be still the major spelling cue at this stage, a conclusion confirmed by in-process interviews. The following conversation is typical of this stage when we found that children insisted they spelled by "sounding out," even though some of their spellings suggested other strategies:

MH: How do you work out how to spell words?
CN: Like, I sound it out and stuff, sound it out.
MH: Ah, show me how you do that.
CN: Like "home," ha-o-mm-a. [CN stressed each isolated phoneme]
MH: I see. And you said "and stuff." What else do you do?
CN: Well, I put the first letter, then I sound out the rest of it.
(Nov. 11, 1987)

Table 1

Spelling Strategy Classifications: November, Grade 1, School 1

Student	JO	DY	ZA	MI	AL	CN	EN	LA[a]
Stage	Pre-Phonemic	Early Phonemic 1	Early Phonemic 2	Phonemic 1	Phonemic 2	Phonemic 3	Transitional	Correct
Spellings								
BUZZ	ǀǀǀǀǀ	B	BZ	BAS	BA≤	BA 𝟱𝟱	B ≶≶	muffin
GAME	XIII	E	EG	GMe	GAM	GAM	GAME	camp
DOCTOR	Ɏ ecoel	D	DT	DeR	DADR	ɑOK ɑR	Docter	Doctor
VIEW	VE1	V	VU	VU	VYOW	VEO	VOWO	tack
YELLOW	ϒ OR	Y	GLO	ULO	YALO	YELO	yellaw	hero
KISS	♀BI	S	CS	KeS	CES	KIS	Kiss	pickle

[a] Participant spelled initial words correctly in kindergarten.

We see this phase as signalling a move to *Transitional* spelling. We have not yet sufficient data to confidently identify the significant development within the Transitional stage but have observed increasing use of analogy (e.g., HEROW, ONECE), a rapid growth in correct spellings, frequent references in interviews to having "seen the word before," and greater ability to recognize personal misspellings and to isolate parts that "don't look right." The following conversation illustrates this focus on visual features by EN:

MH: Are there any words you're not sure about?
EN: Hero [HEROW] and yellow [YOLOW].
MH: So what is it about those two words that you're not sure is right?
EN: Because I writed this before [pointed to YOLOW] and O wasn't two O's.
MH: There weren't two O's?
EN: [shook her head] But I know it's longer.
(Nov. 11, 1987)

Participants are not consistent in spelling development across all contexts, performing at a higher level in dictation situations. This apparent lag in spelling when composing may be disappearing for "good" spellers as they become Correct spellers, but Stewart (1988) and Warren (1989) suggest that it continues for some older students.

Literacy Development and Movement Through Spelling Stages

This study seeks to identify significant learnings that mark movement from one stage to the next. The spelling data, protocols for Concepts about Print, and reading development data support the following interpretations.

Prephonemic to Early Phonemic. Although concept of letter and some knowledge of letter names are necessary for a move to Early Phonemic spelling, these do not appear to be the key learnings related to this move. In fact, all Prephonemic spellers had a stable concept of letter (Clay, 1979), all but two knew at least 19 letter names, and there were examples of Prephonemic spellers who had more letter knowledge than some Early Phonemic spellers. More important appears to be a developing concept of word in print. Of the 14 Prephonemic spellers in kindergarten at the second school, 8 showed signs of Early Phonemic spellings indicating they were on the verge of moving from Prephonemic to Early Phonemic spelling. They were the only Prephonemic spellers who demonstrated a rudimentary concept of word (Morris, 1983) by successfully completing at least two concept of word tasks: isolating one and two words in print, identifying the beginning and end of words, completing word matching tasks. The other 6 Prephonemic spellers demonstrated little or no concept of word.

It appears important that children are willing to risk using their letter knowledge to get messages into print. There was a marked difference between children in the two schools in this respect. In School 1, only one child at the end of kindergarten made no attempt to spell any of the 10 dictated words, in spite of knowing 23 letters by name and 16 by sound. In the School 2, six children attempted fewer than 3 words and a further eight attempted only 4 or 5. The majority of these children had sufficient letter knowledge to attempt the words but chose not to do so.

Early Phonemic to Phonemic. Again, concept of word, now at a more developed level, emerged as a key factor in this move. To develop as fully Phonemic spellers, the children had to establish a stable voice-print match, demonstrated by pointing accurately to words as they read memorized text, in other words, Morris' (1983) functional concept of word. No participant moved to Phonemic spelling before demonstrating this degree of understanding of "word." Of the 25 children who, by fall, Grade 1, had a stable voice-print match, 22 were Phonemic spellers and 3 were Transitional. By spring, Grade 1, 39 had established voice-print match, with 34 Phonemic spellers and 4 Transitional.

Phonemic to Transitional. It is clear in our data that fluent reading is a necessary, but not sufficient, condition for this move. We determine fluent reading to be the ability to orally read unfamiliar, age-appropriate material with expression and comprehension, in a one-to-one reading situation. No participant has moved to Transitional spelling without demonstrating this level of fluency. However, reading fluency does not appear to lead directly to Transitional spelling. In fall, Grade 1, of the 9 fluent readers, only 3 were Transitional spellers. By fall, Grade 2, there were 21 fluent readers, of whom 12 were Transitional spellers. Typically fluent reading appears to precede Transitional spelling by a full grade.

We have as yet too few Transitional spellers in School 2 to draw conclusions, but we observed in School 1 that just prior to their move to Transitional spelling many participants demonstrated an increased sense of engagement and greater fluency in their writing, and we are continuing to explore this possible relationship more closely.

IMPLICATIONS

Working from a qualitative research perspective, this project attempts to identify relationships among spelling, reading, and writing. To date we have confirmed both the direction of development established by Henderson (1985) and Gentry (1982), and the importance of phonemic awareness, concept of word, and reading fluency in the early stages of spelling development. An important concern as the children move into Transitional spelling is to identify how knowledge about print they receive while reading is learned in a way that can be transferred to spelling. Initial study supports the interrelationships of spelling, reading, and purposeful writing, suggested by Henderson and Templeton (1986). However, it seems possible that some learners could develop a more refined understanding of spelling in other ways; after all, do all good spellers have a history of purposeful writing?

There is a need to determine what is meant by terms used by various researchers to describe development, for example, the lag we found between fluent reading development and transitional spelling is not noted by Henderson (1990) or Bear (in press). Differing ways of defining and determining reading fluency and Transitional spelling could account for these differing perceptions. Even such a critical term as "correct speller" may be subject to differing interpretations. Pringle and Friedman (1985) found that, in the writing of 5th- and 11th-grade students, misspellings were similar in type and frequency, suggesting that students reach a ceiling of spelling development fairly early in their education, probably before many reach the highest stage indicated by Henderson. The situation is even less precise in the area of writing, where development is only sketchily described in current literature. Our study indicates there is a need to develop a clearer picture of the development of writing in order to address key questions about the relationships between spelling and composing. These questions include: Is the rate of spelling development affected by experience in composing? What awareness of the spelling system is created in composing? Do children who are comfortable generating spellings compose differently from children who are less comfortable?

The complexity of spelling development within literacy development has confirmed the value of a longitudinal qualitative approach. Looking at performance across tasks, examining a child's history, and confirming findings in a second group have provided rich data to broaden our understanding of literacy development.

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VARIABILITY IN APPROACHES TO IDENTIFYING POLYSYLLABIC WORDS: A DESCRIPTIVE STUDY OF SIXTH GRADERS WITH HIGHLY, MODERATELY, AND POORLY DEVELOPED SYLLABICATION STRATEGIES

John Shefelbine
Teachers College, Columbia University

Joanne Calhoun
University of Texas at Austin

For readers who have difficulty with decoding, polysyllabic words can be particularly troublesome even when single-syllable words are not a problem (Just & Carpenter, 1987; Samuels, LaBerge, & Bremer, 1978). Skilled readers, on the other hand, successfully identify polysyllabic words by effortlessly breaking them down into syllables (Mewhort & Campbell, 1981). It is well-established that letters rather than contextual cues play a central role in this highly efficient process. According to Adams (1990), it's readers' knowledge of likely interletter relationships and spelling patterns that enables them to instantaneously perceive syllable units in a holistic manner. In fact, this identification of syllables becomes faster and more accurate than even the identification of single letters. Note also that this process does not involve any time-consuming application of the division rules that are frequently part of programs that purport to teach syllabication (Groff, 1971).

What is not so clear, however, is how automatic or fluent identification of polysyllabic words develops among good readers or, more importantly, how it can be encouraged or developed among poorer readers. To better understand what might influence the transition to fluent reading, we examined how students with varying levels of word identification ability go about trying to read difficult polysyllabic words presented in isolation. More specifically, we described and contrasted the performances and strategies of 36 sixth graders by carefully analyzing which syllables and letters they correctly attended to.

This study is based upon a simple but powerful model of how fluent word identification develops. Since skilled readers attend to letter information, it stands to reason that those who are not so skilled also need to pay attention to letters if they are to become familiar with the spelling patterns and interletter associations that indicate possible syllable units. Adams (1990) stresses the importance of attending to letters in the development of automaticity in general. Letter-sound relationships are particularly useful not only because they help students decipher words but also because they focus attention on letter patterns, thereby increasing the chances of subsequent identification on an automatic level. Writing words should have a similar effect.

This model explains our reasons for wanting to describe the extent to which readers attend to letters and syllables in polysyllabic words that are *not* yet part of their sight vocabulary. We suspected that better readers are more likely to use strategies that help develop automatic identification of words. The model also explains why we were interested in having students read words in isolation rather than in context. Skilled readers often do not use context to identify words; as already noted, they more frequently look at patterns of letters (Adams, 1990). For poor readers, who tend to overrely on context, fluency is less likely to develop because they pay less attention to letters (Stanovich, 1980).

Two aspects of how polysyllabic words are identified involve more complex issues: one entails the nature of spelling patterns and syllables, and the other concerns the role of vowels.

Syllable patterns are highly dependent on the frequency with which certain strings of letters occur (Adams, 1990). More common sequences of letters tend to occur *within* syllable boundaries rather than across syllable boundaries. These less common interletter associations automatically "pull" the syllables apart. In an example given by Adams, skilled readers perceive a syllable division between *d* and *n* in *Sidney* but not between *d* and *r* in *children* because *d* is 40 times more likely to be followed by an *r* than an *n* (p. 18). It is the *relative* strength of interletter and spelling pattern associations that determines which letters are pulled together and which are pulled apart. For example, *pil* is a syllable in *pilfer* and *pilgrim* but not in *pilot*. Whether a set of letters is a syllable often depends upon the surrounding letters. Thus, identifying patterns of syllables in a word requires more developed and complex knowledge of letter and spelling patterns than the knowledge needed for reading single syllable words (see Shefelbine, Lipscomb, & Hern, 1989).

One implication of the variable nature syllable units and syllable boundaries is that, at least some of the time, students need to attend to letter patterns and syllables in the context of polysyllabic words. Focusing on syllables in isolation is not enough.

The importance of vowels in reading polysyllabic words is a matter of some debate. Adams (1990) maintains that consonants carry most of the information necessary for identifying syllables and that vowels merely separate consonants and help signal possible units not by their sound value but by the physical space that they take up and by their presence in each syllable. She illustrates this effect by substituting an asterisk in place of each vowel. *Llstrtn* and *cmprhntn* are difficult to read; **ll*str*t**n* and *c*mpr*h*nt**n* are not (p. 120).

Our own sense is that these kinds of examples are misleading because they only illustrate what skilled readers can do with well-established sight vocabularies and highly developed knowledge of spelling patterns. As pointed out by Shefelbine (1990), vowels and vowel sounds may well play a more central role in the *development* of fluency and automaticity among less able readers. We feel that vowel sound information not only helps readers figure out words that are not known by sight but also increases how much attention is given to spelling patterns in a specific word and in words in general. We suspect that students who know and make use of vowel sounds will become fluent readers of polysyllabic words more quickly than those who do not.

METHOD

Participants

From a pool of 71 students across four classes in a middle school, 36 sixth graders were selected to represent three levels of syllabication ability (high, moderate, and low). Syllabication ability was measured with a test in which students read 22 polysyllabic pseudowords. This measure followed a 2 by 2 design: two-syllable versus three-syllable pseudowords and morphemic versus nonsense units, for example, "admem," "nonjectous," "sasvop," and "fudlempo." Students were considered high in syllabication if they correctly read 18 or more of the 22 words on the polysyllabic test. They were intermediate if they read between 12 and 15, and low if between 0 and 8. These criteria resulted in three "moderately extreme" levels rather than a continuous distribution. Thirty-six of the 71 students fell within these categories, with 12 subjects in each. For the high, moderate, and low groups, medians (and ranges) of percentile scores on a word identification test (Woodcock, 1987) were 72 (27 to 85), 39 (9 to 81), and 11 (.3 to 33) respectively. The school itself was part of a large urban district and served a heterogeneous mixture of higher and lower achieving students (approximately 50% Anglo, 30% Mexican-American, and 20% African-American).

Measurement of the Dependent Variable

The dependent variable, students' ability to read real polysyllabic words in isolation, was measured by the word identification subtest of *Woodcock Reading Mastery Tests* (Woodcock, 1987). This individually administered test contains 106 words that progress in difficulty (from *was* to *zeitgeist*). Students keep reading until they miss six out of eight consecutive words. For each student, we identified the last 10 (and generally most difficult) polysyllabic words that were *incorrectly* read. Since students were at different levels and since they missed different words even when they were at the same level, the sample of words varied from student to student. We viewed this variability as an advantage because it allowed us to examine the strategies students use with words that are closer to their word identification levels. Since there were 12 students in each group, we analyzed 120 words within each of the three ability levels. Eleven words on the Woodcock were eliminated because they were so irregular (e.g., *cologne, naive, tableau, zeitgeist*).

Procedures

Two judges analyzed each incorrect response by coding a series of descriptive categories. Disagreements, which occurred less than 8% of the time, were resolved through discussion. The categories themselves involved three types of analyses, most of which were summarized in terms of percentages and ratios.

Syllable analyses. Across the 120 words that were incorrectly read by each group (high, moderate, and low), we calculated (a) the total number of syllables that were in the words, (b) the number of these syllables that were correctly read as well as the number correct at the beginning, middle, and end of the words, (c) the number of prefixes and suffixes that were correctly identified, (d) the number of syllables that were added and how many were omitted and whether these additions or omissions occurred at the beginning, middle, or end of the words, (e) the number of instances in which common syllables or real words were substituted for syllables (e.g., *train* for *-tri/an* in *pedestrian*), and (f) the number of real word substitutions (e.g., *caution* for *causation* and *department* for *departure*).

Consonant analyses. Again across the 120 words misread within each group of 12, we counted the total number of consonants that were correctly identified. In addition, we classified errors in terms of whether consonants were (a) added, (b) dropped, (c) incorrectly identified (e.g., given a totally inappropriate sound), (d) incorrect because of letters having multiple sounds (e.g., the sound of *c* where the student says *judikus* for *judicious*), and (e) in reversed order (e.g., *quintensus* for *quintessence*).

Vowel analyses. Finally, we counted the total number of vowels that were correctly read by each group. Five types of vowel errors were coded and counted: (a) incorrect accents and schwas (*tooberkyoolus* for *tuberculous*), (b) incorrect vowel sounds in vowel-consonant-vowel letter sequences (VCV) that were inappropriately divided (e.g., *juhdighcious* for *judicious*), (c) wrong vowels, (d) dropped vowels, and (e) added vowels.

RESULTS

Because of the relatively large number of words that were analyzed (120 per group and 360 across all three groups), we feel the results of this study are useful to those interested in descriptions of what syllables and letters students correctly attend to when reading polysyllabic words. To our knowledge, no previous studies have provided such detailed information. Because the rather extensive content of the tables is generally straightforward, we do not cover each detail, but rather, concentrate on major patterns across and between the groups.

Syllables

These analyses (see Table 1) indicated that (a) highs and moderates correctly read about half of the syllables in their words, whereas lows read less than a third (keep in mind that many of the words missed by lows were somewhat shorter and easier to read); (b) highs correctly read around two-thirds of both beginning and ending syllables, moderates were about as good as highs in reading beginning syllables but were successful with less than half of those at the end, lows had substantial difficulty with both beginning and ending syllables of which only about a third were correct, and all groups experienced the most trouble identifying middle syllables; (c) all three groups correctly read around three-quarters of the prefixes, and highs' use of suffixes was equally strong, whereas that of moderates and lows was only successful about one-half of the time; (d) moderates and lows were twice and four times as likely to omit syllables as highs, and across all levels, the vast majority of omissions and additions involved syllables in the middle of words; and (e) lows were much more likely to make syllable substitutions and real word substitutions.

Table 1

Percentages (and Ratios) for Syllable Categories by Level of Syllabication Proficiency

Group	Total Number Syllables in Words	Syllables Correct	Syllables Correct			Prefixes Correct	Suffixes Correct	Syllables Omitted	Syllables Added	Where Added or Omitted			Substitutions	
			Beginning	Middle	End					Beginning	Middle	End	Syllable	Word
High	450	57%	68%	34% (71/210)	62%	78% (38/49)	73% (68/93)	3% (14/450)	4%	0%	88%	12%	(6/120)	(1/120)
Moderate	442	48%	62%	33% (67/202)	43%	74% (25/34)	54% (46/86)	6% (27/442)	4%	2%	82%	16%	(15/120)	(1/120)
Low	415	33%	35%	20% (35/175)	33%	75% (12/16)	49% (38/71)	11% (45/415)	4%	3%	72%	25%	(21/120)	(11/120)

Note. Total number of words read by each group was 120 (12 students times 10 words per student).

Table 2

Percentages and Ratios for Consonant Categories by Level of Syllabication Proficiency

		Types of Consonant Errors[a]				
Group	Consonants Correct[b]	Consonants Added	Consonants Dropped	Wrong Consonant	Multiple Sounds	Reversed Order
High	93%	4/43 (9%)	12/43 (28%)	8/43 (19%)	14/43 (33%)	5/43 (12%)
Moderate	90%	12/59 (20%)	13/59 (22%)	17/59 (29%)	12/59 (20%)	5/59 (8%)
Low	81%	45/119 (38%)	28/119 (24%)	28/119 (24%)	13/119 (11%)	5/119 (4%)

[a] Ratios and percentages are based on total number of consonant errors rather than total number of consonants. [b] Total possible consonants for highs, moderates, and lows were 649, 643, and 596 respectively.

Consonants

Highs and moderates correctly attended to and used 90% or more of the consonants in words; for lows this rate dropped to 81% (see Table 2). Although all groups were equally likely to drop consonants, moderates and lows were two and four times more likely to add consonants.

Vowels

Across all three groups, students experienced more difficulty with vowels than with consonants (see Table 3). Highs correctly identified about two-thirds of the vowels; moderates and lows were closer to one-half. However, at least one and possibly two types of vowel errors could be deemed less "serious" and not necessarily worthy of any special instruction. The first involved problems related to accents and

Table 3

Percentages and Ratios for Vowel Categories by Level of Syllabication Proficiency

		Types of Vowel Errors[a]				
Group	Vowels Correct[b]	Accent/ Schwa	VCV Division	Wrong Vowel	Dropped Vowel	Added Vowel
High	63%	74/183 (41%)	41/183 (22%)	29/183 (16%)	18/183 (7%)	17/183 (9%)
Moderate	55%	66/204 (32%)	41/204 (20%)	44/204 (22%)	32/204 (16%)	17/204 (8%)
Low	47%	52/236 (22%)	43/236 (18%)	43/236 (18%)	48/236 (20%)	16/236 (7%)

[a] Ratios and percentages are based on total number of vowel errors rather than total number of vowels.
[b] Total possible vowels for highs, moderates, and lows were 451, 445, and 411 respectively.

schwas, and the second entailed vowel-consonant-vowel patterns (VCV) when the consonant is equally likely to "stay" with the first vowel or "go" with the next (e.g., *fel/on* vs. *o/pen*). Almost two-thirds of the highs' errors belonged to these two categories. For moderates and lows the proportions were around one-half and two-fifths. All groups were about the same in their proportion of VCV errors, but the incidence of accent-schwa errors decreased with the level of each group (from high to lows these were roughly two-fifths, one-third, and one-fifth).

As for more serious errors, all groups were equally likely to substitute or add vowels, but moderates and lows were twice and three times as likely to omit vowels altogether.

DISCUSSION

The results clearly and consistently demonstrated that students with higher levels of polysyllabic word identification ability gave greater attention to and made better use of syllable, consonant, and vowel information when figuring out words that were *not* yet known automatically or at sight. More proficient decoders were more likely to attend to and use final syllables and suffixes as well as consonant and vowel information and less likely to omit syllables and vowels, add consonants, and substitute syllables and words sharing minimal features. At the outset of this paper, we suggested that a transition to fluent identification of polysyllabic words requires that students take time to attend to letter patterns as or after they decipher words. This is exactly what the more able readers in this study seemed to be doing.

In contrast, the less able readers seemed to be using strategies that only focused on a minimal number or partial set of syllable and letter patterns. These strategies not only made it more difficult for them to figure out words but also reduced the chances that even correctly decoded words would later be identified at sight. It must be noted that these results reflect students' maximum rather than typical performance. In connected text, poorer readers, who often overrely on context cues, are even less likely to pay attention to letter patterns.

Oral Vocabulary Knowledge

Particularly among students in the high group, misread words often were reasonably decoded but were incorrectly pronounced because of inappropriate patterns of stressed and unstressed syllables. Because many of these words were rare (e.g., *internecine, tuberculous, expostulate*), we inferred that a major reason these students had difficulty involved their never having encountered certain words orally or in print. Trying different pronunciations in a flexible manner was not a helpful strategy if and when no match existed in the students' oral vocabulary. Thus, it is important to understand and remember that these misidentified words do not represent a decoding or syllabication problem.

Syllable Position

Students had an easier time identifying syllables at the beginning and ending of words than those in the middle. There are at least two possible explanations for this result: (a) patterns are easier to recognize when one boundary is explicitly defined, and (b) prefixes and suffixes are more familiar patterns because of their higher frequency.

We were surprised that moderate and low students made much less use of suffixes than of prefixes. One reason for this may be that they processed words linearly and gave up and guessed after getting bogged down in the middle of words. Another reason may be their limited familiarity with the many suffixes that occur in words. An obvious instructional intervention that might significantly improve performance in a relatively short amount of time would be to teach common suffixes, which tend to be consistent and stable, and to encourage students to look for them in words.

Consonants versus Vowels

Consonants received a lot of attention and provided students with much useful information. It is reasonable to assume that most consonants were familiar to students; consonant errors probably resulted from guessing and prediction strategies that simply disregarded significant amounts of letter and spelling-pattern information.

Vowels, on the other hand, were attended to less, particularly among moderate and low students who were not as likely to even use them as syllable markers. In the low group, one out of every five vowel errors involved dropping or overlooking a vowel. Still, students did seem to use vowels to figure out the words. Since the accent-schwa errors actually involved the appropriate use of acceptable vowel sounds, the percentages for correct vowels in Table 3 can be increased to 80, 70, and 60. Our own sense is that vowels play another important role in the development of pattern knowledge and fluency besides that of helping students identify possible units and patterns through their physical presence. Vowels also enable students to pronounce syllable units, and these in turn enable them to figure out many words correctly and independently. For students who read widely, this greatly increases their exposure to a variety of letter patterns. In this study, the highs were correctly using as many as four out of every five vowels to identify their unfamiliar words.

Some Final Thoughts

Developing proficiency in identifying polysyllabic words entails a vicious circle in which students need to read many polysyllabic words successfully to learn likely letter patterns but knowing these same patterns is necessary for reading the words in the first place. Among poorer readers, this problem is compounded by a tendency to disregard or misinterpret relatively large proportions of letter information—yet another example of the Matthew effect in which those who know less learn less (Stanovich, 1986).

Extensive reading at independent levels should help break this cycle, since students will be able to use context to identify at least some words. However, in both this instance and when words are pronounced by the teacher, students need to be encouraged to examine letter patterns once the word is identified. Teachers might consider formally focusing some attention on common syllable units and patterns as they occur in words encountered in text across all subject areas (see Shefelbine, 1990). Also, extensive writing seems worthwhile because the attention that is necessarily given to spelling should directly increase letter-pattern knowledge and help promote reading that is fluent, effortless, and meaningful.

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THE RELATIONSHIP BETWEEN RAPID AUTOMATIZED NAMING AND ORTHOGRAPHIC KNOWLEDGE

Donald R. Bear
University of Nevada, Reno

Diane Barone
University of Nevada, Las Vegas

Recite the alphabet from A to Z as quickly as you can. Next say the alphabet omitting every other letter. Finally, name the alphabet backwards from Z to A. The differences in speed and accuracy hinge on experience: the first task comes automatically, like a signature; the second task is somewhat slower than the first; the final task is unfamiliar and requires concentration and additional time. These tasks represent a simple sequence in the difficulty of alphabet naming. As the naming becomes more difficult speed-accuracy tradeoffs (MacKay, 1982) are made to ensure a satisfactory level of fluency and accuracy.

There is a long history in the study of rapid naming (Jackson & Biemiller, 1985; Murphy, Pollatsek, & Well, 1988; Wolf, 1982). Luria (1973) indicated that naming disturbances impact reading and writing. Denckla and Rudel (1976) investigated RAN (Rapid Automatized Naming) as a measure of verbal ability similar to the work of Luria (1980). Adults with acquired reading disability had difficulty finding words or naming pictures. Rudel (1983) found that naming ability was the single factor which best characterized clinically referred children. Walsh, Price and Gillingham (1988) described the transitory importance of rapid naming to beginning reading.

Rapid naming is perhaps another way of following the language facility and power in verbal planning prerequisite to fluent oral reading. In kindergarten, a nongraphotactic and nonphonological linguistic skill like color naming predicts reading achievement. However, by first grade, rapid naming of letters accounts for the greatest amount of the variance in reading achievement scores (Blachman, 1984). Reading fluency and rapid letter naming are fairly automatic processes which are unencumbered by conscious control (Brown, 1981; Rayner & Pollatsek, 1989).

In a series of naming studies with primary children, Wolf, Bally and Morris (1986) found that rapid continuous naming was related to single-word reading. For beginning readers, oral reading performance was related to the rapid naming of letters. However, in second grade the continuous naming of letters held less predictive value. Wolf and Goodglass (1986) explain that there is a "growing autonomy in both naming and reading systems" (p. 164).

Although recent research has established a clear link between reading achievement, word reading, and rapid naming, the quality of the subjects' word knowledge has not been adequately described in terms of orthographic knowledge. The relationship between RAN and measures of orthographic knowledge is of critical importance and is the major focus of this study. It is possible that rapid naming tasks and measures of orthographic knowledge tap a similar level of linguistic competence.

Based on a developmental model of orthographic knowledge it was assumed that spelling performance (correctness and quality of misspellings) would reflect orthographic knowledge. Henderson and others have outlined a clear sequence in orthographic development based on children's spellings (Chomsky, 1970; Henderson, 1990; Templeton & Bear, in press). Henderson described five stages of spelling development which correspond to levels of orthographic knowledge (Preliterate/Prephonetic, Letter Name, Within Word Pattern, Syllable Juncture, Derivational Constancy). The first stage is the Preliterate stage in which children write with scribbles or random letters or numerals. Gradually, children's orthographic knowledge develops and can be observed through their more accurate representations of words; by the final stage, Derivational Constancy, most words are spelled correctly (cf. Henderson, 1990).

In this exploratory study, two areas of research, RAN and developmental word knowledge are considered together. Other researchers (Henderson, 1981; Henderson & Beers, 1980; Read, 1975) have shown a clear developmental sequence in orthographic knowledge. This study is a first attempt to relate rapid naming with stages of orthographic knowledge. More specifically, this study investigated differences between beginning readers in the Letter Name stage of spelling, and students in the Within Word Pattern stage who were transitional readers approaching fluency and flexibility in their reading. To find a relationship between RAN and specific levels of orthographic knowledge would lend support to an integrated and synchronous model of literacy development (cf., Bear, 1991).

METHOD

Subjects

There were 42 subjects in this study. Nineteen first- through third-grade readers from a multigrade classroom were all at or above grade level in reading achievement. Twenty-three subjects between the ages of approximately 7 and 10 years old were enrolled in a summer reading program and had experienced difficulties in reading in their regular classroom.

Materials and Procedures

Subjects were tested on the majority of tasks individually over a 2-day period in two 30-minute sessions, one session per day. The Gates-MacGinitie Reading Test was administered at a separate time. The investigators administered the following tasks in the order presented below. The order of task presentation remained the same for each child.

Naming tasks. Although the children completed several naming tasks, two naming tasks following Wolf (1982) will be reported here. The first task required subjects to identify five letters. The students named five sets of the same letters, and the letters in each set were repeated randomly. Students were pretested on each particular letter so that there was no doubt about the subject's knowledge of a specific letter name.

Following this letter naming task, each student generated lists of words beginning with the letter A. A time limit of one minute was set for this generative naming task.

Spelling-by-Stage assessment. Each child spelled 20 words as a way to measure orthographic knowledge. The words were ordered from highly frequent single syllable, short vowel pattern words (*bed*) to less frequent irregular vowel patterns (*caught*) and multisyllabic words (*pleasure, fortunate*). This spelling inventory is based on Schlagal's (1982) qualitative spelling inventory. The investigators scored the spelling inventories to determine a spelling-by-stage assessment for each subject. This feature analysis followed Henderson's description of the five stages of spelling (1990). For example, children who spelled short vowels in single-syllable words correctly and who consistently marked long vowels correctly, in some cases, and incorrectly in others were categorized in the Within Word Pattern stage of spelling. A 15-point scale was created by dividing each stage (Preliterate/Prephonetic, Letter Name, Within Word Pattern, Syllable Juncture, Derivational Constancy) into high, middle, and low where 0 represented the least proficient speller and 14 the most proficient (Bear & Barone, 1989). Interrater reliability for spelling placement had been established previously (Bear, in press) at .92 and above, and a correlation of .94 between the number of words spelled correctly and the spelling-by-stage assessment had also been determined, so category placement accuracy was not a concern.

Reading achievement test. Each child was administered the Gates-MacGiniie Reading Test (Levels A–C, Form 1, MacGinitie, 1978). The subjects in the primary classroom were given the test level that paralleled their grade placement. For students in the summer reading clinic, instructional level as determined by individual informal reading inventories (IRIs) was used to select an appropriate level of this test.

ANALYSES AND RESULTS

The spelling-by-stage assessment (Sp × St), as measured through the qualitative spelling inventory, had a mean of 5.84, which is in the late Letter Name Stage, with a standard deviation of 3.0. As can be seen in Table 1, students named, on average,

Table 1

Means, (Standard Deviations), and Univariate F Tests on Two Groups Defined by Spelling Stage

Variables	*M*		*F* Test	*p*
Letters	40.721	(15.304)	8.69	.005
A Name	4.791	(2.406)	6.26	.017
Gates	2.602	(1.498)	22.81	.001
Age	8.2356	(.950)	.24	.624

five *A* words in a minute, and scored just beyond the middle of second grade in reading achievement.

The correlations between the variables were examined next. The strongest correlation, .82, occurred between the Gates-MacGinitie Reading Test and the spelling-by-stage assessment. This result is not surprising as this relationship has been noted in other research endeavors (Templeton & Bear, in press).

Following the initial descriptive statistic analysis, MANOVA and an exploratory discriminant analysis were performed on the data. The MANOVA analysis was conducted to determine if there were differences between groups separated by spelling stage. The subjects were divided into two groups based on stage of word knowledge: one group contained 21 Letter Name spellers and below; the second group contained 21 Within Word Pattern spellers and above. The results of the MANOVA indicated that there were differences between the groups in letter naming and *A* word naming. The Pillais and Hotellings *F* values were $F = 4.88$, significance level = .000, indicating a significant main effect. Univariate tests indicated that the Gates, letter naming, and *A* word naming contributed to the differences between these groups. The age of the students was also considered as a variable in this analysis. Age, however did not contribute to the differences between the groups (see Table 1).

A discriminant analysis was used to determine if a cluster of variables could discriminate group membership. Letter naming and *A* words were used to determine spelling-by-stage group membership. These variables significantly discriminated groups with 80% accuracy (see Table 2).

The results of the statistical analyses indicated the importance of the relationship between orthographic knowledge and letter naming. This relationship was explored through MANOVA and discriminant analyses. Generally, there were speed differences in the naming tasks between subjects classified at various levels of word knowledge.

Table 2

Discriminant Analyses on Groups Defined by Spelling Stage

Letter Naming and A Naming

	Number of Cases	Predicted Group Membership	
		Group 1	Group 2
Group 1	20	15 (75%)	5 (25%)
Group 2	21	3 (14%)	18 (86%)

Percent of grouped cases correctly classified: 80%

Variable	Wilks' Lambda	*F*	Significance
Letter Naming	.834	7.732	.0083
A Naming	.930	2.925	.0952

Canonical Correlation = .4414, Wilks' Lambda = .8051

Chi-Squared = 8.2379, $p = .0163$

Note. Group 1 = Prephonetic and Letter Name Spelling. Group 2 = Within Word Pattern, Syllable Juncture, Derivational Constancy.

Subjects in the lower levels of orthographic development were slower in naming compared with subjects at higher levels of orthographic knowledge who were relatively faster.

DISCUSSION

As in other studies, this study demonstrated a clear relationship between lower level reading skills and rapid naming tasks (cf. Perfetti, 1985; Wolf & Goodglass, 1986; Wolf et al., 1986). In addition, orthographic knowledge may now be included in this relationship. The analyses indicated a stronger relationship between naming and the spelling-by-stage assessment than between naming and age.

The results of this study indicate that indeed there is a relationship between orthographic knowledge and rapid naming. In studies where grade was used as a variable for age, letter naming and its relationship to reading was not significant in second grade and above. Perhaps these insignificant results were in large part due to all the children in one grade level being considered together. This grade-level grouping of students may have blurred or glossed the differences among the students. In this study, age was shown to be a nonsignificant variable with letter naming. For example, a clinic child of 8 with little word knowledge named letters very slowly, whereas a younger child at a more advanced level of orthographic knowledge named the letters more rapidly.

Orthographic knowledge was the critical variable in the speed of letter naming rather than age or grade. The MANOVA and exploratory discriminant analysis supported the strength of the spelling-by-stage assessment. This assessment may be a tool to look more closely at the specific features learners master at different steps along their way to becoming proficient readers. At primary levels, teachers use the spelling-by-stage assessment to plan word study and reading activities (cf. Bear & Barone, 1989).

In the assessment of emergent and beginning literacy, the spelling-by-stage assessment may be compared to ecologically valid rapid naming type tasks. For example, children who recite the alphabet and find individual letters accurately and quickly may be the same children who spell initial consonants correctly and easily. Fluency and flexibility in the early stages of literacy development seem to be important concepts. One might wonder if more sophisticated rapid naming tasks are related to the higher levels of spelling development (cf. Bear, Templeton, & Warner, this volume). Over the next 30 seconds, say as many words as you can that begin with an *a*.

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LEARNING MEANING VOCABULARY THROUGH LISTENING: A SIXTH-GRADE REPLICATION

Steven A. Stahl
University of Georgia

Margaret A. Richek
Northeastern Illinois University

Roberta J. Vandevier
Chicago Public Schools

Nagy and Anderson (1984) estimate that there are 88,700 word forms in printed school English from the 1st grade through the 12th grade. About half of these words will occur no more than once or twice and probably will not need to be learned. Assuming that a child learns the other half of them, or about 45,000 words, this means that the average child learns about 3,000 new word meanings per year. That vocabulary learning of such volume actually occurs has been confirmed by White, Graves, and Slater (1990), who estimated that children's actual vocabulary growth is between 1,000 and 5,000 words, with the average being about 3,000 words.

Learning Word Meanings from Context

Where does this growth come from? As Nagy and Herman (1987) point out, even the best direct vocabulary instruction can account for only a small portion of this phenomenal amount of growth.

Nagy and Herman (1987) have calculated that, given the average amount of reading done by school age children, the average percentage of unknown words in materials that they read, and an average rate of learning one unknown word of 20 in a single exposure (5%), that they could account for a significant amount, if not all, of the 3,000 words learned each year. This 5% figure is a conservative estimate based on their studies of incidental learning from context (Herman, Anderson, Pearson, & Nagy, 1987; Nagy, Anderson, & Herman, 1987; Nagy, Herman, & Anderson, 1985) as well as that of Jenkins, Stein, and Wysocki (1984). This series of studies all had children read various articles containing words that were presumed to be unknown to them. Sometime later (15 minutes later in Nagy et al. [1985], the next day in Herman et al. [1987], and a week later in Nagy, Anderson, & Herman [1987]), students were given a surprise multiple-choice vocabulary test. Learning of unknown words varied from 5% to 22% from a single exposure to words in the text. The 5% figure is their conservative estimate of long-range vocabulary learning.

In this series of studies, some text and learner characteristics were systematically varied (see Nagy & Herman, 1987, for review). For example, words for complex concepts (or words such as *tributary* which are tied to a particular schema) were more difficult to learn from context than simpler concepts (Herman et al., 1987). More "considerate" text (or text in which the words' meanings were given elaborate support and examples) were more conducive to learning words from context than less considerate texts (Herman, et al., 1987; Nagy, Anderson, & Herman, 1987; see also Konopak, 1988). There was some evidence that the effects of text considerateness were stronger in expositions than in narratives (Nagy, Anderson, & Herman, 1987).

These studies have examined the learning of vocabulary words through exposure to written context and have concluded that children can make large gains in vocabulary knowledge simply through such exposure. However, as Stanovich (1986) points out, those who can understand the other words in the text are more likely to learn a word from written context. Children who do not read well do not read as much or read material that is simplified by reducing the vocabulary load. From such reading, children will learn fewer word meanings. If vocabulary knowledge at least partially enables children to read more demanding texts, lack of word meaning knowledge will further impair their ability to read more challenging texts, which will in turn further impair their growth in vocabulary, especially when compared to their competently-reading peers who are reading more and more advanced texts. Because the rich get richer and the poor get poorer, or the gap between good and poor readers continues to grow wider as children progress through school, Stanovich (1986) calls these "Matthew effects." The implication of these Matthew effects are that poor readers will continue to fail unless the cycle is explicitly broken.

It is unclear whether poor readers or low-aptitude readers are less capable than their peers at learning word meanings from context. The trend seems to be that in tasks in which subjects were given explicit instructions to derive word meanings from context (e.g., McKeown, 1985; Shefelbine, 1990) high ability students are better at deriving word meanings than low ability students (with ability measured in various ways). However, in incidental learning tasks, in which subjects were *not* specifically directed toward learning word meanings from a text, there do not seem to be ability differences (see Stahl, 1990, for review). These incidental tasks seem closer to the actual conditions in which most learning from context occurs. If there are no differences in the ability to learn word meanings incidentally, then differences in word knowledge between good and poor readers may be largely due to differences in exposure to words in context. Direct vocabulary instruction can make up part of this difference (see Stahl & Fairbanks, 1986). Reading stories to children can make up another part.

Learning Word Meanings from Listening

Elley (1989) found that children could learn word meanings from listening to stories. In a series of two studies, the 7- and 8-year-olds he studied in New Zealand learned about 15% of the unknown words in the books read in class without any teacher explanation and about 40% with teacher explanations. These gains were found up to 3 months after the stories had been read. He found that the best predictors of whether a word was to be learned was how often it appeared in the text, whether it was illustrated, and the amount of redundancy in the surrounding context, many of the same features found by Nagy and his colleagues to affect learning from written context.

Eller, Pappas, and Brown (1988), found that after three readings of a children's trade book kindergartners used more words from the text that were presumed not to be known, suggesting that they were learning new words from storybook reading. Leung and Pikulski (1990), using the same text and similar subjects as in the Eller et al. study but adding a pretest and a control group, confirmed these findings.

We have found no studies dealing with learning from listening to stories using older children. Because of the importance of breaking the cycle of Matthew effects in older children, it is important to extend these learning from context effects to that population. The following study was intended to examine specifically the effects of learning from listening to less able readers within that population.

METHOD

Subjects

Subjects were 43 sixth graders in two classes in an urban public school. About 60% of the students were white, about 30% African-American, and the remaining were from other backgrounds. Their families were predominantly, but not entirely, middle-SES. According to standardized test scores provided by the district, the average student scored at about the 55th percentile on the Iowa Test of Basic Skills (ITBS), Reading Composite (Hieronymus, Hoover, & Lindquist, 1986). There were no significant differences among classes on the Iowa. Grade equivalent scores on the ITBS ranged from 4.2 to 9.7, with no student reading below the fourth-grade level. It has been suggested that students reading above the fourth-grade level can be assumed not to have difficulties in decoding text (e.g., Chall, 1983).

Materials

Two selections were chosen from seventh-grade literature anthologies to read to the students. One dealt with the Greek myth of Phaëthon, the other with a Vietnamese myth. They were chosen to be parallel in structure and theme. They were both about 1,000 words in length and took about 10 minutes to read aloud. According to the Dale-Chall readability formula (Dale & Chall, 1948), both passages were suitable to be read by seventh and eighth graders.

Fifteen words were chosen from each of the selections to be potentially difficult by the experimenters and a classroom teacher. Judging from the students' performances on the posttests, the vast majority of these words were, in fact, not well known. However, two of the words in the Vietnamese selection and one in the Phaëthon selection were known by 90% or more of the students in the control condition and were dropped from the analysis.

A 30-item multiple-choice test was developed to test subjects' knowledge of the word meanings. This test was developed by having each of the target words matched with a correct synonym and three distractors taken from the same semantic field. Internal consistency was acceptable for an experimenter-made test (*alpha* = .70).

Procedure

The second author, a university researcher, read one of the two selections to each class, as part of their regular language arts period. The classes were not told that they would be tested on any of the words encountered in the story. The researcher made no attempt to discuss or highlight any of the specific word meanings in the selections.

Two days later, all students were given the vocabulary test, containing words taken from the selection they had heard and that which they did not hear. Half of each class took the test in written form. For the other half of each class, one of the experimenters read each of the items aloud as students followed along on the written protocol. This listening mode was provided in case students might know a word from listening but not recognize it in print.

RESULTS

Children recognized an average of 53.5% of the words in the Heard passages and an average of 46.9% from the Unheard passages, a difference of 6.6%, roughly comparable to learning from context effects found in other studies.

To test the statistical significance of this effect, data were submitted to a hierarchical repeated measures Analysis of Variance, using an analysis parallel to that of Nagy, Anderson, and Herman (1987). In that analysis, the number of Heard and Unheard words correct on the multiple-choice measure were treated as a repeated measurement. In that analysis, the main effects for the between subjects factors are not of interest and should be essentially zero, as they are in this analysis. What is of interest are the effects of these factors on learning from context. These were tested by examining the interaction between Condition (Heard, Unheard) and Group (Group 1 heard the Phaëthon selection, Group 2 the Vietnamese) and Testing Mode (Written, Listening). The results of the analysis are in Table 1.

As evidenced by the significant Condition effect, there was significant learning from context effect. Students knew the meanings of about 6.6% more words from the selection they had heard than from the selection they did not hear. This is roughly comparable to the findings of Nagy and his colleagues. However, as shown in the stem and leaf diagram of the results in Table 2, this learning varied considerably among subjects, from the 9 subjects who knew more words in the Unheard selection than in the Heard selection to one student who had a 56% difference. (A stem and leaf diagram is a graphic display of the distribution of scores. The left hand column represents the "tenth" place and the right hand numbers represent the "hundredth" place, so that the top four sets of numbers represent differences of −.42, −.26, −.26, and −.26 respectively).

The significant interactions between Group and Condition and the significant three-way interaction between Group, Mode, and Condition explain part of this varia-

Table 1

Analysis of Variance for Multiple-Choice Measure

	MS	*F*	*p*
Between Subjects Effects			
Selection (Vietnam, Phaëthon)	.016	0.29	.595
Mode of Testing (Listening, Reading)	.000	0.01	.927
Selection × Mode	.039	0.70	.407
Error	.055		
Within Subjects Effects			
Condition (Heard, Not Heard)	.102	6.12	.018
Selection × Condition	.074	4.47	.041
Mode × Condition	.007	0.43	.519
Selection × Mode × Condition	.116	7.00	.012
Error	.017		

tion. In a counterbalanced design such as this, often, significant interaction terms reflect the influence of a factor not included in the design. In this case, more words were known from the Vietnamese passage than from the Phaëthon passage, regardless of which passage the students heard. Since the passages varied considerably on a number of different dimensions, it is difficult to interpret this finding.

The difference between the two test modes, listening and reading, was not statistically significant. Subjects' performance did not seem to be affected by whether the test items were written or whether they were heard. This lack of a Test Mode effect suggests that students who learn word meanings from listening might be able to transfer that learning to written words with little difficulty. Some theorists (e.g., Gough & Tumner, 1986) have suggested that, once students can decode automatically, as all of these students could be presumed to be able to, oral vocabulary and written vocabulary are identical.

Differences between readers also account for some of the variations found. We graphed the relationship between the percentage of Unheard words a subject knew

Table 2

Stem and Leaf Diagram of Differences between Heard and Not Heard Passages

−.4	2
−.3	
−.2	666
−.1	87200
0	653332
.1	00123999
.2	05566668
.3	344
.4	
.5	6

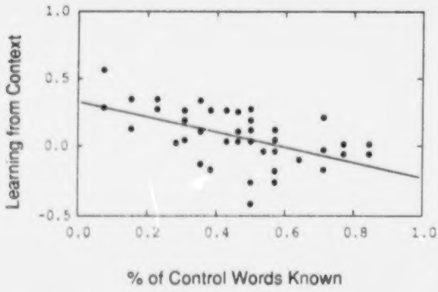

Figure 1. Relationship between control word knowledge and learning from context.

and that subject's learning from context, measured by the difference between Heard and Unheard words. Since the number of Unheard or control words known is a rough measure of the subjects' vocabulary knowledge prior to the study, this analysis was intended to examine whether the students who entered with the lowest amount of word knowledge could learn from listening. This is shown in Figure 1.

The correlation between these two variables is −0.527 ($p<.05$), suggesting that the greatest gains were made by subjects who knew the fewest words prior to reading. This could reflect a ceiling effect, since subjects who knew a great many words in the beginning could gain little. Because of this apparent ceiling effect, the average gain of 6.6% is probably artificially low, and potential gains from listening are higher. Subjects who knew 33% or fewer of the words from the passages they did not hear made an average gain of 22%, suggesting a possible upper figure on a learning from context effect. These figures, 6.6% and 22%, are both within the range found for learning from context in similar studies conducted by Nagy and his colleagues (see Nagy & Herman, 1987 for review).

DISCUSSION

The results of this study are simple to summarize. First, this study extends the findings of Herman, Anderson, Pearson, and Nagy (1987), Nagy, Anderson, and Herman (1987), and Nagy, Herman, and Anderson (1985) that children can learn a significant amount of word meanings from exposure to an oral presentation. Second, it extends the findings of Elley (1989), Eller et al. (1988) and Leung and Pikulski (1990) from primary-aged children to sixth graders. Finally, it demonstrates that even those children who begin with the lowest vocabulary achievement can learn as many word meanings from listening, if not more, than those who have higher initial vocabulary knowledge. The lowest third of the students in our study learned word meanings effectively from material written above their grade level.

Quite simply, these results give another reason for recommending that teachers read to their classes, even up to the middle grades. It has been suggested that reading stories and chapters of novels to older children can stimulate their interest in reading (Trelease, 1989), expose them to more mature forms of language (Chomsky, 1972), and provide background information necessary to read other, related texts (Hartman, 1990). The results of this study suggest that reading literature to students might, over an extended period of time, be a significant source of students' growth in word knowledge. These long-term effects are only inferred, and they need to be tested using a longer term of study.

Learning word meanings from listening may be more important for the child with reading problems, who is cut off from a significant source of vocabulary growth, that of written text. Continuing to increase this child's store of word meanings may allow more rapid progress once the child's difficulties are addressed. Without such continued growth, a child whose word recognition difficulties, for example, are eventually resolved, may be restricted by not knowing word meanings that his or her classmates had picked up in the course of their reading. Continual reading of moderately difficult but interesting material may make up some of the growth in vocabulary that the child with reading problems may be missing.

If the 10 minutes spent in reading aloud in this study seems small, it should be contrasted with the amount of time that students read during the day. Studies have found that this can be as low as 3 minutes a day for less competent readers, up to about 20 minutes including home and school reading (see Anderson, Wilson, & Fielding, 1988). Given the relatively small amounts of time children ordinarily spend reading, especially those who are poor readers to begin with, 10 minutes of exposure to sophisticated language may make a considerable difference.

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THE EFFECTS OF THE CVS STRATEGY ON CHILDREN'S LEARNING

Eileen Carr
University of Toledo

Mary Bigler
Eastern Michigan University

Cyndi Morningstar
Plymouth, Canton Schools

Complete reading strategies enable children to be trained to process and integrate information as they read (Bereiter, 1985), thereby improving comprehension (Carr, Dewitz, & Ogle, 1988). In addition, teaching vocabulary has been shown to improve reading comprehension (Beck, Perfetti, & McKeown, 1982; Kameenui, Carnine, & Freschi, 1982). Moreover, research with junior high school students shows that, when students are taught a more complete writing strategy that includes vocabulary words, the results are both heightened vocabulary retention and enhanced writing ability (Duin & Graves, 1987).

The extent to which combining vocabulary tasks with composing may improve both writing growth and vocabulary comprehension of young children has yet to be considered. The present study was conducted in two stages during 2 academic years. The first objective was to test the effectiveness of a complete reading and writing strategy—CVS (Comprehension, Vocabulary, and Summarization)—and its components.

Designed to promote comprehension, vocabulary learning, and writing ability through an integrated approach to language arts, the three components of the CVS strategy are a story grammar, Vocabulary Overview Guide, and summary writing. Story grammars have been used successfully in primary classes to guide students in the identification, integration and comprehension of important story elements (Fitzgerald & Spiegel, 1983). They have also been used effectively to improve writing ability (Fitzgerald & Teasley, 1985) by providing an easily followed outline and checklist of ideas for students to include in summary writing and creative compositions (Hillocks, 1987).

The Vocabulary Overview Guide trains students to learn vocabulary words by forming a network of relationships between words and story concepts through a categorization process and by linking words with background knowledge through personal clues. It also provides a systematic way for students to associate the words with specific story elements, thereby facilitating the inclusion of vocabulary words with appropriate story elements when writing summaries and original compositions.

Summary writing improves comprehension by requiring students to organize their thoughts by forming a gist of the story in their own words. Summarization also improves students' composition skills and enables incorporation of vocabulary words in writing, which increases vocabulary retention and word usage (Duin & Graves, 1987).

After the strategies were implemented, the second phase of the study undertook to determine if the results achieved at the outset would be maintained by the students for an extended period of time without instruction. Strategies learned one year often are discarded the following year when students encounter teachers with different instructional practices. Therefore, it is important to determine the duration of instructional gains and if students have internalized the targeted procedure.

METHOD

Subjects

The subjects were 90 second-grade students from a midwest suburban school. Three intact heterogeneous classes were randomly assigned to one of three treatment groups taught by their teachers, who had been trained in one of the three procedures used in the study.

Instructional Procedures and Materials

Instructional materials, analyzed for appropriate readability levels, story structure, and vocabulary content, consisted of five stories from the students' basal reader and five stories from children's literature. The stories were selected on the basis of similarities of structure, events, and level of vocabularies.

Comprehension, Vocabulary, Summary (CVS) Group. The CVS treatment group received training in a complete comprehension, vocabulary and summarization process. After learning elements of story grammar, students read and discussed each story and completed worksheets that contained a story grammar outline.

Once having learned word meanings through discussion and associating them with background knowledge through personal clues (Carr & Wixson, 1986), students completed the vocabulary portion of their worksheet. A graphic organizer guided students to integrate vocabulary words with appropriate story elements (setting, characters, events, ending) and categorize words according to whom or what they described in the story.

Students constructed summaries of the story using their story grammars on the worksheet. The graphic organizer served as a reminder to include vocabulary that was associated with various categories of information in particular story elements. Terms were used to elaborate on important story events, add information, and embellish their writing.

Story Grammar Group. The second treatment group learned story grammar and used a worksheet to outline the story. These students, however, merely learned vocabulary conventionally, by writing words and their definitions and using them in sentences. Although summaries were written with the story grammar outline, students in this group did not learn to associate learned vocabulary words with story elements.

Vocabulary Group. The third treatment group was not trained to use story grammar. Instead, it discussed and answered questions about the passage that were not explicitly associated with story grammar elements. They learned the same personal clue vocabulary procedure as the first group but did not associate the words with story grammar elements or categorize the words according to what they described in the passage. They wrote summaries of the story, but without benefit of a story grammar outline and association of the terms with story parts.

To provide clear and explicit instruction in the procedures, three stages of instruction based on Roehler and Duffy's model (1984) were followed during the 10 instructional passages. During the first through fourth instructional passages, the teacher explained and modeled the delegated procedure, encouraged and discussed student responses, and provided corrective feedback. Next, during passages five through eight, students completed portions of the procedure and received corrective feedback from the teacher and peers. Students also wrote summaries which were likewise reviewed by the teacher and peers. In the final phase, covering passages nine and ten, students completed work independently and received corrective feedback from their peers and teacher.

Students in each group learned their creative writing procedure in a similar manner. After the instructional passages were completed, students in the CVS and Story Grammar groups received explicit instruction on how to use their procedures to write original stories. Students initially wrote a class story; next, they worked in small groups to write a story together. The third story, a posttest, was written independently.

Students in the Vocabulary group were similarly instructed that they could write their own stories the same way they wrote summaries. They were told to write about the important events in the story.

Experimental Measures

Students were pre- and posttested with six assessment measures. Results from the Iowa Test of Basic Skills ensured quality of reading ability among groups and measured general comprehension gains.

The experimenter designed a vocabulary pretest, a posttest, a delayed posttest, and a long term delayed posttest consisting of the 50 words (half from five basal stories, half from five children's literature texts) taught in the instructional passages. Because of the young age of the children, tests were administered individually so that they could respond orally.

The delayed posttest was administered 4 weeks after instruction. The long term delayed posttest was given 8 months after instruction. Reliability for scoring was computed for each assessment measure using random samples of 20 posttests by using the product moment coefficient of correlation. All scoring discrepancies were discussed and resolved. Interrater reliability for the vocabulary scores was $r = .97$.

Experimenter designed comprehension tests, consisting of four counterbalanced passages, examined students' ability to answer literal and inferential questions on stories similar to their instructional passages. Interrater reliability was $r = .92$.

Writing ability was measured by summaries and original stories. A pretest and posttest summary was written on the literature books used in the comprehension test. A long term delayed posttest was administered using three basal stories. Scores were combined for analysis. Holistic scores, ranked 1 to 5, were based on students' use of content, organization, sentence structure, mechanics and vocabulary usage. Calculations for content were determined by the number of ideas and idea elaborations as determined from a researcher-constructed story grammar guide. Interrater reliability was $r = .94$.

A pretest, a posttest, and a long term delayed posttest for original stories were scored for ideas and idea elaborations using the same method as summaries. Stories were not scored on the use of specific vocabulary words; they received, however, a score for creativity when an unusual idea was included in a story element such as an original character, event or ending and for use of rich, descriptive vocabulary words. Interrater reliability was $r = .94$.

RESULTS

The results for the comprehension and vocabulary tests and summary writing were analyzed using an analysis of variance. Creative writing scores were analyzed using an analysis of covariance with the creative writing pretest as a covariate. Statistically significant results were subjected to a Scheffe test.

Comprehension

Iowa Tests. The results for the Iowa pretest, $F(2, 79) = .18$ $p > .05$ (CVS – $M = 18.80$; Story Grammar – $M = 19.36$; Vocabulary – $M = 18.37$) and posttest, $F(2, 84) = .01$ $p > .05$ (CVS – $M = 21.00$; Story Grammar – $M = 21.03$; Vocabulary – $M = 21.13$) indicated that there were no statistically significant differences in general reading comprehension ability among the groups.

Experimenter-designed tests. Results for the experimenter-designed comprehension tests indicated no statistically significant differences for literal questions on the pretest, $F(2, 83) = 3.08$, $p > .05$ (CVS – $M = 1.54$; Story Grammar – $M = 1.88$; Vocabulary – $M = 2.09$). There was also no difference among groups on the posttest, $F(2, 83) = 3.44$, $p > .05$ (CVS – $M = 2.23$; Story Grammar – $M = 2.59$; Vocabulary – $M = 3.00$). Statistically significant differences in students' ability to answer inferential questions was discerned on the pretest, $F(2, 83) = 3.44$, $p < .05$ (CVS – $M = 2.06$; Story Grammar – $M = 2.59$; Vocabulary – $M = 3.18$). A Scheffe test indicated that students in the vocabulary group were significantly better than students in the other two groups in answering inferential questions. This finding was not, however, substantiated by the posttest, which indicated no statistically significant differences among groups, $F(2, 83) = .95$, $p > .05$ (CVS – $M = 4.03$; Story Grammar – $M = 5.51$; Vocabulary – $M = 4.82$).

Vocabulary. Results for the vocabulary tests are presented in Table 1. The vocabulary pretest indicated no statistically significant differences among groups for targeted vocabulary words selected from the basal test, $F(2, 85) = 1.97$, $p > .05$, or from the

Table 1

Analysis of Variance for the Vocabulary Tests

	Treatment Group							
	Comprehension Vocabulary Summarization		Story Grammar		Vocabulary		*F*	
Test	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Vocabulary Pretest								
Basal	3.90	3.50	5.64	3.29	5.35	3.98	1.97	(2.85)
Literature	2.96	2.55	4.28	2.40	3.42	3.25	1.69	
Vocabulary Posttest								
Basal	15.93	5.66	12.68	5.00	14.72	5.43	2.75	(2.88)
Literature	12.03	5.31	8.65	3.52	10.62	4.95	3.90*	
Vocabulary Delayed Test								
Basal	17.89	5.09	12.78	5.23	14.60	5.73	3.71*	(2.84)
Literature	12.37	5.51	7.60	4.04	10.96	5.04	1.05*	
Vocabulary LongTerm Delayed Test								
Basal	12.74	5.11	11.72	5.31	12.83	4.40	.39	(2.52)
Literature	11.25	5.55	8.44	3.06	10.29	3.93	2.62	

*Significant at the .05 level.

literature books, $F(2, 85) = 1.69$, $p > .05$. Results from the vocabulary posttest indicated no statistically significant differences among groups on the comprehension of basal words, $F(2, 88) = 2.75$, $p > .05$. Results for the comprehension of literature words were statistically significant, $F(2, 88) = 3.9$, $p < .05$. Students in the CVS group remembered significantly more words than students in the Story Grammar group.

Results for the delayed test indicated there was a statistically significant difference among basal, $F(2, 84) = 3.71$, $p < .05$ and literature based words, $F(2, 84) = 1.05$, $p < .05$. The CVS group was superior to the Story Grammar group on basal word comprehension. On the literature words both the CVS group and the vocabulary group were superior to the story grammar group.

Results for the long term delayed test indicated that there was no statistically significant difference for the basal vocabulary, $F(2, 52) = .39$, $p > .05$, or for the literature based words $F(2, 51) = 2.62$, $p > .05$. However, results for the literature based words approached significance. The CVS group and the vocabulary group retained more word meanings than the story grammar group.

Summary writing. Results for the summary writing, presented in Table 2, indicate that there was no statistically significant difference on the pretest, $F(2, 85) = .66$, $p > .05$, but there was on the posttest, $F(2, 84) = 6.8$, $p < .05$. The CVS group was superior to the Vocabulary group.

There was a statistically significant difference on the long term delayed posttest, $F(2, 70) = 4.03$ $p < .05$. The CVS group was superior to the Story Grammar and Vocabulary groups.

Table 2

Analysis of Variance for the Holistic Scores for the Summary Tests

	Treatment Group							
	Comprehension Vocabulary Summarization		Story Grammar		Vocabulary		*F*	
Test	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Pretest	1.68	.89	1.85	.86	1.88	1.05	.66	(2,85)
Posttest	3.29	1.03	2.80	1.08	3.21	.96	6.80*	(2,84)
Long term Delayed Test	2.61	.85	2.26	.88	1.97	.90	4.03*	(2,70)

* Significant at 0.5 level.

Creative writing. Results for the creative writing, presented in Table 3, indicate that there was a statistically significant difference on the pretest, $F(2, 82)=4.66$, $p<.05$. The CVS group was superior to the Vocabulary group. Results for the posttest indicated that there was a statistically significant difference among groups, $F(2, 85)=70.53$, $p<.05$. The CVS group was superior to the other two groups and the Story Grammar group benefitted more than the Vocabulary group. Results indicate that the CVS group was superior to the other two groups, $F(2, 86)=2.76$, $p<.05$. Results for the long term delayed writing revealed no statistically significant difference, $F(2, 50)=2.74$, $p>.05$. However, results approached significance indicating the CVS group was superior to the other groups.

DISCUSSION

Results of the research demonstrate that young readers can be trained to improve vocabulary retention and writing ability using an integrated approach to language arts instruction. We conclude that the CVS procedure was successful in these areas because the individual components of the strategy incorporate elements of instruction that have

Table 3

Analysis of Covariance for the Holistic Scores for Creative Writing

	Treatment Group							
	Comprehension Vocabulary Summarization		Story Grammar		Vocabulary		*F*	
Test	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Pretest	1.68	.54	1.33	.67	1.22	.57	4.66*	(2,82)
Posttest	3.31	.66	2.07	.71	1.27	.59	70.53*	(2,85)
Long term Delayed Test	2.92	.64	2.41	.71	2.21	.66	2.76	(2,86)

* Significant at 0.5 level.

been proven effective in previous research. Our assumption that the procedure would also improve comprehension was not, however, validated by this study.

Story grammar was incorporated in the CVS procedure to promote comprehension and provide an outline for writing. Though previous research has demonstrated the effectiveness of story grammar for selecting and integrating important story information and providing a framework for thinking about stories, results in this study did not transfer to a standardized comprehension test or an experimenter designed comprehension test.

Results of the vocabulary tests indicate that the CVS group was superior to the Story Grammar group on the literature posttest, delayed test, and long-term delayed test and on the basal words on the delayed test. This indicates that elaborating on word meaning using personal clues and writing improves retention of word meaning even after long periods of time without instruction. Results suggest that the procedure is more effective on the delayed recall of literature based vocabulary. Words from literature text appear to be difficult for students to learn, and use of personal clues could be necessary for these less familiar words than the more frequently occurring words from the basal texts. Alternatively, literature based words could be more readily remembered because they are inherently interesting or were presented more effectively in the text. Future research should more fully investigate the use of the strategy with different kinds of literature.

The results also indicate that the Vocabulary group was superior to the Story Grammar group on the two delayed tests. It appears that, with the passage of time, the personal clues may act as a hook which enables retrieval of word meanings. Use of personal clues may be more effective than writing to enhance retention of words over a longer period because, as time passes, the ability to retain words becomes nearly equivalent between the Vocabulary group and the CVS group. The ability of both these groups to retain words is significantly greater with the passage of time than that of the Story Grammar group.

The third component of the CVS procedure was a summarization task. Results of the holistic scores for summary writing indicate that students in the CVS group performed better than the other two groups and maintained that edge after months without instruction. Students who learned to incorporate vocabulary words with story grammar elements had the advantage of using rich vocabulary along with an organizational format to recall information and structure their writing. Because the vocabulary words are linked with story grammar elements, it appears that the words encourage the elaboration of ideas and add a coherence and richness to the writing. This strategy, accordingly, is more effective than story grammar alone.

Results regarding the use of the CVS strategy with creative writing were similar to the results of summary writing. With regard to the coherence and richness of their writing, students in the CVS treatment group performed significantly better than the other two groups on posttests and also on the long term delayed test. Use of story grammar alone was not sufficient to produce significantly better summaries than a practice technique.

From these results we conclude that the integration of language arts instruction through the CVS procedure can be an effective and efficient means of instruction. Young readers' vocabulary retention as well as their summary and creative writing abilities have been perceptively enhanced.

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VOCABULARY LEARNING IN LITERATURE DISCUSSION GROUPS

Peter J. L. Fisher and Camille L. Z. Blachowicz
National-Louis University

Judith C. Smith
Scott Elementary School

As reading programs incorporate more literature and trade books into literacy instruction, teachers are frequently concerned as to when certain skills will be learned by their students (Hansen, 1987) and how these will be utilized in nonteacher-directed situations. Research has demonstrated that students generate a range of responses to literature in discussion groups (Golden, 1986) and comprehend at many levels (Eeds & Wells, 1989). These are encouraging findings in relation to the development of comprehension skills. Yet we know that vocabulary is an important component in comprehension, and the ways in which vocabulary is treated have not been addressed in the research. Literature discussion groups in the Junior Great Books program have been shown to have a positive effect on expanding the vocabulary of intermediate grade students (Cashman, 1977). However, Cashman focused on vocabulary knowledge in general, rather than specific word learning from the texts. This study addresses the vocabulary selection and self-instruction strategies that students choose in discussion of literature, and the ways learning occurs in that context.

Hiebert and Colt (1989) and Zarillo (1989) have shown that teachers differ in their interpretation of how literature-based instruction should be organized. Various grouping practices are used, with cooperative learning groups being one popular model. Johnson, Johnson, and Holubec (1986) have argued that cooperative learning groups promote participation and can be used with any academic task. In this study a cooperative model for literature-based discussion groups was used as part of a reading program in fourth grade.

This study focused on the vocabulary learning and teaching that occurred as part of these cooperative literature study groups. It asked three main questions: (a) Which words did students select to teach other students and why? (b) What procedures did students use to teach the words? (c) How effective were students in learning the words taught in their groups?

METHOD

Subjects

The subjects of the study were 24 fourth-grade students, 12 boys and 12 girls, in a suburban school in a large Midwest city. The students were in one heterogeneous classroom taught by one of the researchers. Reading ability, as determined by the Iowa Tests of Basic Skills (Hieronymus et al., 1986), was between third grade and seventh grade.

Procedures

The research was conducted in February over a 3-week period. The 24 pupils were divided by the teacher into six groups of four. Each group was of mixed reading ability, and in forming the groups consideration was also given to the social skills of the group members. The class was familiar with studying novels in cooperative groups, having previously completed two novels with the same teacher. The teacher had used cooperative grouping in literature study in the previous year. Each group met 14 times over the 3 weeks to discuss the book *Castle in the Attic* by Elizabeth Winthrop. They met during the hour allocated for reading instruction. The first part of the hour was for group meetings. When discussion was complete, the group members read silently and completed their tasks related to the following day's discussion.

Each group member had a particular role or responsibility for each day. The roles were discussion director, vocabulary researcher, literary luminary, and secretary-checker. The four roles rotated each day, so that the discussion director from Day 3 would become the vocabulary researcher for Day 4. As a vocabulary researcher, the student was directed to select about five or six interesting words to teach to other group members from the chapter for that day. After determining an appropriate meaning for each, the researcher would lead the vocabulary discussion and call on the students to locate the words chosen in the book and try to derive their meanings from context. The vocabulary researcher would confirm their predictions or give the accurate meanings. This recommended procedure was an attempt to use a definition and context procedure, such as that recommended by Stahl (1985). In addition to their group task, students kept logs in which they recorded their reactions to the story, summarized what had happened, and predicted what would happen next.

Data were collected from four sources:

1. To address which words students selected, the students' logs were examined. These showed which words were selected for discussion by the vocabulary researcher for that day, and the meanings that he or she identified for those words. The nature of the meanings was examined to determine their accuracy. Students' selections were also compared to the selections of other groups for the same chapter. Commonalities were identified, and considered in terms of possible observable features that affected their selection.
2. To try to identify students' reasons for selecting particular words each child was interviewed by one of the researchers to determine his or her perceived reasons

for selecting vocabulary words for a particular chapter. Thirteen types of reasons, which fell into six categories, were identified.

3. To identify the procedures that students used to teach each other the words, audiotapes were made of each group during three sessions for a total of 18 discussions. Six of these tapes, from two groups, were examined in detail to determine similarities and differences in group vocabulary study processes.
4. To determine the effectiveness of the groups' procedures, a vocabulary test was developed by the teacher-researcher to evaluate learning at the end of the novel study. Each group received a test constructed only for that group, based on the words they had selected as vocabulary researchers. The test had a 15-item matching task and a 5-item sentence production task.

SCORING AND ANALYSIS

The Words Chosen

The number of words chosen by each group varied from 76 to 109 for the 17 chapters. (For the six groups the numbers were 77, 81, 83, 90, 109, and 76.) The highest number of words selected for a chapter was 12, the lowest number (when the vocabulary researcher was present) was 1. Eight or more words were chosen on at least one occasion for every group. If students had selected an average of 5 words a chapter, this would have resulted in a total of 85 words. Only two groups exceeded this. The others averaged between 4 and 5 words a chapter. Chapter length was an average of 10 pages. Thus if all the words were unfamiliar, students were "learning" an average of 5 to 6 new words a day over the 14 sessions.

The choices of each group for each chapter were compared to other groups. The words selected from each chapter by three or more groups are shown in Table 1. It was reasoned that if the words were selected by three or more groups, then features might be apparent that would indicate reasons for their selection. An examination of the words suggests that they might not be part of an average fourth grader's vocabulary. This was confirmed by analyzing the familiarity ratings of the words which indicated that only 14% of them were rated as familiar for fourth grade in *The Living Word Vocabulary* (Dale & O'Rourke, 1981). Thus unfamiliarity would be an initial reason for selection, but could not be the only determinant as many other words in the novel were also unfamiliar at the fourth-grade level. Other reasons for the selection of these words would seem to be their length (e.g., *pediatrician, accommodations*), unusual spelling (e.g., *brusque, gnawed, gyrations*), and their relation to the topic of castles and knights (e.g., *portcullis, minstrel's, pennant*). Table 1 also indicates the reported reasons for word choice given in the student interviews discussed more fully below.

An analysis of the interview data indicated an initial 13 categories of reasons that students gave for choosing the words that they did (see Table 2). These were collapsed into six categories—unfamiliarity, author's style, context as an aid to meaning, focus on word elements, relating to prior experience, and "don't know" (when the students

Table 1

Words Chosen by Three or More Groups for Each Chapter, and Reasons Given for Choosing

Chapter	Word	Reasons
1	poncho	Word elements/unfamiliar
	absorb	Word elements/unfamiliar
	bureau	Prior experiences/word elements
2	minstrel's	Unfamiliar
	portcullis	Prior experiences
3	pediatrician	Unfamiliar/word elements/prior experiences
	gnawed	Unfamiliar/word elements
	scabbard	Unfamiliar/prior experiences
4	indignant	Word elements
	adobe	Unfamiliar/word elements
	architecture	Unfamiliar/word elements
5	enthusiastic	Unfamiliar
	collapsed	Unfamiliar
	plodded	Unfamiliar
	rummaged	Unfamiliar
6	tankard	Unfamiliar/word elements
7	brusque	Unfamiliar/word elements
8	accommodations	Unfamiliar
9	inevitable	Unfamiliar
	peculiar	Unfamiliar
10	hoisted	Unfamiliar/prior experiences
	courageous	Unfamiliar/author's style
	embraced	Author's style
	gaily	—
12	brackish	Unfamiliar/context
13	pennant	—
	murmurs	—
15	gyrations	—
16	gingerly	—

could not verbalize a reason for their choice). The most common reason students gave for choosing the word was that it was unfamiliar in some way. Primarily this meant they did not know the meaning, but included in this category were responses that suggested they chose it when they had some idea of the meaning but wanted to look the word up to confirm their idea. Also included in this category were responses reflecting an unfamiliar use of a familiar word and when the student indicated that, although he or she might know the meaning, the other students might not. These responses were encouraging in the sense that the students were focusing their learning on unfamilar words.

Students also gave reasons related to the interesting sound of the word, difficulties in pronunciation, and unusual spelling. These were categorized as a "focus on word elements." These were obviously features which attracted the student to the word,

Table 2

Classification of Reasons Given for Choosing Words, Including Percent of Reasons Given

Unfamiliar (48%)

- Unknown word: e.g., *architecture*—"I didn't know what it meant"
- Unfamiliar use of the word: e.g., *metal grating*—"I didn't know the word with that meaning, just a grating sound"
- Confirm meaning: e.g., *collapsed*—"I kind of knew it"
- Others won't know it: e.g., *microscopes*—"I didn't think they'd know it"

Word Elements (14%)

- Sound of the word: e.g., *zapped*—"I liked how it sounds"
- Pronunciation: e.g., *tankard*—"I kept saying tankyard"
- Unusual spelling: e.g., *gnawed*—"it's a strange word spelled with a 'g' "

Author's Style (13%)

- e.g., *peering*—"like the author used it instead of saying 'looked through' "
  - *main*—"I liked how they used it in the sentence"

Context (10%)

- e.g., *legend*—"I looked at it in context and worked it out"

Prior Experiences (10%)

- Prior instruction: e.g., *portcullis*—"it's one of the castle words we've done"
- Castle words: e.g., *battlements*—"it's something to do with a castle and we're doing castles"
- Prior experience: e.g., *hoisted*—"I remembered it from 'The Wreck of the Zephyr' "

Don't Know (5%)

- e.g., "can't remember"; "don't know"; "no idea"

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rather than to other words. Such words would be interesting words, and thus the directions to find interesting words might have focused students attention in a way that would not occur in normal reading. Sometimes these reasons suggested children's delight in playing with language, for example, "*garbled*—it's fun to say."

The next most common reason given was related to author's style. Although this term was not used by the students, it arose when the author used a term that the students would not usually use. For example, one student said she chose the word "stomped" because it was a more interesting way to say "walked." This type of response was viewed as very positive, in that students were noting and remarking on the author's craft—becoming literary critics!

The ability to work the meaning out from context was the fourth most common reason given. This might be viewed both positively and negatively. It was positive in the sense that students were exercising an important skill and selecting words that might enable their cooperative partners to do likewise. It was negative in the sense that it could also be viewed as the option that required less work on the part of the vocabulary researcher.

Other reasons included prior instruction, prior experiences outside the school, and the fact that they were "castle" words (all classified as relating to prior experience). Finally, sometimes students could not verbalize a reason for choosing a particular word. When asked why they chose the words they did, rather than other difficult words in a chapter, the students tended to be unable to tell any reason. The students often pointed out (in some way) that not knowing the word identified by the researcher did not interfere with their understanding the text. One girl, even though the word was vital for understanding a paragraph, was secure in the fact that she could understand the story line without knowing what that particular paragraph was all about. The interview data therefore indicated other reasons in addition to the categories of unfamiliarity, word elements, and a castle topic focus that were suggested by the first analysis of the words selected. The students also thought about author's style, using context, and drew "interesting" words from their prior experiences.

The vocabulary researchers were also asked about the ways they set about doing their assigned task. Three ways were represented. First the students noted words in their logs as they read along. Alternatively they went back and found words after they had finished reading. Some students did both, or more commonly wrote down the words and looked up or worked out the meanings after reading. What became clear was that finding the meaning of the words to help with comprehension was not a high priority.

A further indicator of this was the number of children who selected four or more words from only two pages in a chapter. In order to do this a child would typically have to open the book to the two pages, scan them for possible words, and select those words to write down. Examining the words selected revealed that 20 of the 24 children did this at least one of the times they were vocabulary researcher, and for 8 children this was the technique they employed for most of the time.

The meanings children selected for the words they chose were examined to determine if they were the correct meanings, if they were inappropriate meanings, whether the chosen meaning was unclear, or if no definition appeared in the log. A correct meaning was chosen for 64% of the words, an inappropriate one for 12%, an unclear meaning for 14%, and no meaning appeared for 10% of all words chosen.

The Effectiveness of the Teaching Procedures

Twenty-two students took the vocabulary test. The 8 students who got 100% on the test were evenly distributed across groups. The average scores ranged from 66% to 93% with Group 6 (66%) and Group 5 (93%) accounting for the extremes. This initially suggests that most students effectively learned the vocabulary they selected. The tapes from Groups 5 and 6 were examined in more detail to determine reasons for the extremes in performance.

Group Procedures

Groups 5 and 6 were observed and taped in three discussion sessions on the novel, and the written artifacts of these lessons were analyzed. In examining these data, both similarities and differences between the groups emerged.

The first similarity was in using context and prior knowledge as the preferred modes for deducing a word's meaning. Most of the written definitions, or defining information, was "reality worded" in that it sounded like a child's explanation rather than a dictionary definition. For example, for *adventures* the meaning "exciting happenings" was offered, for *straddle* the meaning "a horse . . . a gym horse, what you do on a gym horse." This use of context could also be seen in the number of incorrect definitions with observable connections to the text. For example, both the meanings "*intricate* . . . it had something to do with decorations" (the word modified by *intricate*) and *flanked* which was related to a "long trestle" when a trestle table was included in the description, make clear illusions to the use in the text.

There were also instances in which each group chose a single word to stand in for a textual phrase, such as *fix* for "in a fix"; *minstrels* for "minstrels' gallery." Even so, they defined the word in appropriate phrasal contexts, emphasizing that the context was an important source of information for them. They did not pull a word from the context and use their knowledge and language to define it without reference to the text.

That the dictionary was problematic, or at least not the tool of choice, for the children in these groups was substantiated by the verbal comments from both groups that they had consulted the dictionary but could not find the word. This happened for *vaguely* and *intricately* (Group 6) and *meekly* and *brusque* (Group 5). It is interesting to note that three of the four words not found were inflected forms that would have appeared under another main entry. It is possible that they could not be found for this reason. The vocabulary researcher also sometimes misspelled the words which may have also made dictionary use difficult. In any event, the dictionary was a tool used sparingly by the directors of these groups for these sessions. An examination of the meanings in the logs of other groups suggests that the dictionary was also used sparingly by some students and almost exclusively by others.

Though both groups favored using the context to clarify a word's meaning, the process they followed as a group in using and discussing the contexts differed. The process for the vocabulary researcher in Group 6 was to read the word, tell his or her contextual meaning to the group, and move on. In Group 5, there was more interaction among the students as they offered comments and examples of their own words (e.g., for *straddled*, a hand gesture description and a sentence example) and by having the other students go back to the text and find the words and read its whole sentence context from the book. This style of interaction seemed to have been set in the early sessions and to have been followed in the course of the novel. As a result, Group 5 not only chose more words to discuss, they spent longer time on the words (over 92 seconds per word as compared to Group 6's average of 23 seconds per word), much of the extra time being accounted for by locating and rereading the relevant text.

A teacher prompt, "What does it mean?", also encouraged the vocabulary researcher for Group 5 on Chapter 8 to add this statement to his procedure. This was added after each reading of the word in context, but only in the lesson in which the prompt occurred. Also, although Group 5 spent more time on more words, there was not much critical discussion of the actual meaning of the word once an idea had been offered in either group. Thus, for example, such meanings as *eager* = "very something," *raw* = "like raw meat," *emerge* = "come out of the water," *flanked* = "long trestle," were deemed as acceptable, though most of the words did have an acceptable meaning attached to them in these three lessons.

An examination was made of the meanings written in the logs for the two groups for all the sessions. It showed that an appropriate meaning was selected by Group 5 more often than by Group 6—78% versus 64% of the time. The corresponding figures for inappropriate meanings were 6% and 14% respectively. Thus the better than average performance of Group 5 may have been due to finding appropriate meanings.

Lastly, another way in which Group 5 differed from Group 6 was in the selection range for word choices. Students in Group 6 more frequently selected the words from mainly two pages. The vocabulary researchers in Group 5 seemed to have made more of an attempt to actually perform the selection task in a meaningful way, rather than looking at a few pages just to satisfy the requirement of the assignment. At a minimum, this included more reading of more text, which, in overview, may be a determining difference between the groups.

DISCUSSION

In our study it became apparent that students selected words from a text for study in cooperative groups for a variety of different reasons. There was some unanimity in the words chosen—29 words were overlap words, chosen by three or more of the groups. This represented from one quarter to one third of each group's selection list. The predominant reason for choosing a word was its unfamiliarity. However, there were many more possible unfamiliar words in the book than those which were selected. The other features which seemed to influence choice were: elements at the word level (sound, unusual spelling, pronunciation), a reflection on the author's word choice or usage, the availability of the meaning from context, and having seen or heard the word on some previous occasion. Although similar reasons were used by all groups, the same word was sometimes chosen by different students for different reasons.

It was interesting to note that allowing children to choose their own words for learning did not result in a selection of words which were "easy," but focused on unfamiliar and interesting words. Thus having a teacher select vocabulary is only one way of introducing new vocabulary to students. The students seemed reasonably effective in learning the meanings of the words they selected. The results on the vocabulary test suggested that, if given a chance to review the words they selected, students can demonstrate an adequate knowledge of the meanings. The percentage of correct meanings noted for the words from the logs was disappointingly low at 64%. However, only 12% of the meanings were inappropriate (in that context). It is interesting that the group that performed best on the test (Group 5) also selected the correct meanings more frequently than the average (78%).

The performance of that group further indicates that time spent on learning the words, contextual exposure, and choosing words from a broad base may facilitate learning in such a context. These findings are hardly surprising. They are well known in terms of teacher instruction. However, it is satisfying to have these findings extended to when the students themselves are the teachers.

It may be that including other procedures in the process of vocabulary learning in cooperative literature study groups could help increase its effectiveness. Since the teaching process in the groups seemed fixed fairly early, greater emphasis on how to share the meanings of the words could be effective. Further, the inclusion of some cross-group synthesis might help. Within the context of this classroom and this novel, several other processes were being emphasized—the group process itself in terms of cooperative learning and what that meant, how to write good comprehension questions, and selecting examples of literary elements to share. In general we felt that the students did a good job in all respects, and that vocabulary learning in cooperative literature discussion groups is appropriate and effective.

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THE RELATIONSHIP BETWEEN READING PRACTICES LITERATURE AND TEACHERS' TALK ABOUT PRACTICES*

Patricia L. Anders
University of Arizona

What are the barriers to teachers' use of research-based practices? The results of surveys suggest that teachers do not use research to make pedagogical or curricular decisions (Berger, 1976). Many educators believe that if teaching practices were grounded in research, both teacher effectiveness and student learning would be improved. Admittedly, this is a simplistic notion: examples abound of practices based on the findings of research that result in less effective and even harmful effects (Samuels & Pearson, 1980); nonetheless, the intersection of theory and practice has long been a topic of interest among educators, including Dewey (1929). He suggested that researchers and practitioners would benefit from an exchange of knowledge and experience: the practitioners would be liberated from "the bondage of habit which is always closing in on us, restricting our vision both of what is and what the actual may become" (p. 210), and "the theorist would be liberated from the expectation that they carry all the burdens of knowledge . . ." (p. 298).

Three years ago my colleagues and I set out to discover the potential barriers to teachers' use of research-based practices to teach reading comprehension. To address this question we reviewed both the scholarly literature and the practice literature to locate practices possessing a research-base, particularly those deemed appropriate for Grades 4, 5, and 6, located teachers from six elementary schools who agreed to work with us as we gathered data about their schools, their students, their teaching practices and beliefs about teaching reading, and designed and conducted a staff development program with them. From these data we developed case studies of each of the participating schools, analyzed the characteristics of the staff development program, and used various assessment measures to inform us about how students of our participating teachers did or did not change their reading behaviors.

The purpose of this report is to share findings from the literature review and to compare the literature to the practices teachers talked about during development sessions.

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The Literature Review

Operationally defining a recognizable comprehension instructional practice in the literature was challenging. The literature helped us decide on a definition of *practice*. If an author of a synthesis, review, or data-based article identified a variable as a practice, we did too. In other cases, we defined a practice as a teacher-initiated, observable, and describable activity that was linked to a theoretical notion of the reading process and was designed to provide an opportunity for reading comprehension to occur.

To find studies that described and reported on practices we relied on syntheses and reviews since 1980 ($N = 72$), and original sources ($N = 186$) cited in the synthesis and reviews. Reviews of literature typically contained a rationale for the review, methodology, descriptions of practices, results, and related discussions. In contrast, synthesis chapters and articles usually presented a related set of literature for the purpose of supporting the author's premise(s). Usually they did not contain the author's methodology for reviewing the literature, and often the practices were not sufficiently described; thus, the original sources were read to gather the information we sought (see Lloyd, Tidwell, Anders, Batchelder, Bos, & Bradley, 1988; or Richardson & Anders, 1991; for the references reviewed).

While reading the literature, we gathered information to answer the following questions: (a) What is the name of the practice? (b) To whom is it attributed? (c) What theoretical rationale supports this practice? (d) What is the quality of the study? (e) To what extent do the results of this study support the practice? (f) How great of an inference does one need to make for this practice to be realized? (g) How usable does this practice seem to be, given typical classroom constraints? (h) To what extent does the present reviewer have overall confidence in this practice?

When a substantial amount of the literature was reviewed we categorized the practices by focus topics, meaning that the rationale supporting the practice became categories by which practices were grouped. The following foci were created: Background Knowledge, Text Characteristics, Vocabulary, Independent Study Strategies, Visualization, Self-Monitoring and/or Metacognition, Teacher/Text-Generated Questions, Student-Generated Questions, Varying Modalities, Reading and Writing, Critical Reading, Attention/Selection/Purpose, Memory and Retrieval, and Literature Groups. (Other practices were categorized as "lesson frameworks." These are coherent, "complete lessons" and because of difference in unit size are not included in this report.)

Next we reviewed journals (1980–1988) that are generally available to teachers. We found most research-based practices in *The Reading Teacher*, *The Journal of Reading*, and *Language Arts*. The practices reported in these journals were reviewed for the theory/research base of the practice and the extent to which the practice was judged to be usable in the typical intermediate-level classroom. The articles found in these journals were categorized in the foci that were created from the research literature.

The Staff Development

The theoretical framework that guided the staff development process was Fenstermacher's (1986) concept of practical arguments. The goal of the staff development was to develop an environment that would allow teachers to examine their explanations for the practices they employed in relation to empirical premises and practices drawn from the literature review. The design of the staff development accommodated teachers individually and as a group. We intended for the group-level meetings to be constructivist, providing an environment where teachers could explore their cognitions and beliefs about practices and current research on practices.

The data on which this paper is based emerged from the group staff development discussions with teachers from each of two schools that served as "experimental schools." In one school (School A), all Grades 4, 5, and 6 ($N = 6$) teachers and one LD teacher participated. The principal dropped in from time to time during the 11 meetings that were held after school in the library. The Grade 4, 5, and 6 teachers ($N = 5$) in the second school (School F) and their curriculum specialist met during the afternoon for 8 meetings in the home of one of the researchers while substitute teachers taught their classes. All sessions were videotaped and analyzed.

Using the videotapes as our source of data, we analyzed the process as a whole and the discourse during the sessions to determine patterns and the nature of conversation around theory and practice (see Richardson, Anders, Lloyd, & Tidwell, in press, for detailed analysis procedures and elaborated results). With regard to patterns that emerged in that portion of the study, we found that the program appeared to follow certain stages, each stage taking different lengths of time in the two schools. We also determined that participants' attention and observable participation varied according to the discourse mode. Another finding was that the teachers presented more practices than we did, and that teachers' apparent interest in the research-based practices that we had to offer was minimal. Another focus also emerged from this analysis, one teachers identified as "fluency." Thus that focus was added to the list of categories.

For purposes related to this paper, two sessions were selected from each of the schools for further analysis of the nature of the teachers' theoretical talk around practices. Session 8 was selected from School F because the teachers were talking about the practice of using literature groups. Session 6 was selected from School A because teachers were talking about the use of questioning—both student-generated questions and their own questions.

RESULTS

The first question is: What foci emerged from the review of literature, and what emphasis did each of the foci have in the overall picture? Table 1 summarizes these results in the second and third columns.

We found 199 studies in the empirical literature that described and tested 73 comprehension practices for Grades 4, 5 and/or 6. Among these, the focus labeled text received the most attention in the literature. A close second was the focus on vocabulary practices and the third was practices related to background knowledge.

The literature designed for teachers to read showed similar trends. Here practices based on the foci of vocabulary, text, and background knowledge were again very important; however, two other foci also emerged: reading and writing, and modality. The inclusion of practices that integrate reading and writing and those that represent the use of different modes of learning to facilitate reading comprehension are interest-

Table 1

Summary Table: Comparison of Practice Sources

Focus	Teacher Reported	Teacher Literature	Empirical Literature
Vocabulary	0 (.00)[a]	31/22[b]	46/13
Background Knowledge	4 (.11)	24/12	19/9
Text	2 (.06)	21/13	43/15
Teacher/Text-Questions	7 (.16)	3/2	12/6
Self-Generated Questions	7 (.16)	12/4	9/4
Modality	3 (.07)	19/12	7/4
Motivation	10 (.23)	0/0	1/1
Visualization	1 (.02)	6/3	15/4
Reading and Writing	2 (.05)	22/15	25/4
Attention/Selection	2 (.05)	0/0	12/5
Critical Reading	3 (.08)	4/3	1/1
Fluency	1 (.02)	0/0	0/0
Metacognition	0 (.00)	16/9	8/5
Literature Groups	2 (.05)	0/0	1/1
Total	34	158/95	199/73

[a] The % of total practices discussed by teachers. [b] First value = total number of articles, second value = practices.

ing trends in these data. These two foci are distinguishable from the foci that were emphasized in the empirical literature in two ways: first, these foci tend to include practices that are integrative of the language arts; and, second, the empirical support for the practices tend to be theoretical and descriptive rather than controlled and experimental.

In contrast, column 1 in Table 1 represents the focus of the teachers' practices discussed or presented during the staff development. Here, teachers focused on practices related to questioning and student motivation. These results suggest a dichotomy between teachers and the literature. Although the teacher literature seems to bridge the empirical literature and the teachers' discourse, it could be argued that all three are operating on different planes with very little overlapping concerns.

A rank ordering of the foci within each data source further explicates this dichotomy. Note that practices related to vocabulary were never discussed by the teachers, but that is the focus receiving the most attention in both types of literature. Further, teachers' concern with motivation (ranked number 1) was never a focus in the teacher-directed literature, and it is ranked as the last priority within the empirical literature. Motivation is an area of investigation that has received considerable attention in the psychological literature (Ames & Ames, 1989), but has not been a focus in the reading literature.

It is also important to note that teachers seldom relied on a singular focus to explain their practices. Rather, discussion about a particular practice was likely to be associated with more than one focus. For example, analysis of teachers from School A's discussion of questioning—both teacher- and student-generated questions—

revealed that the rationale given for using the practices was a combination of: (a) activating prior knowledge, (b) helping students select what to pay attention to in a reading assignment, (c) motivating students to want to read an assignment, (d) critical reading, and (e) assessing the quality of students' comprehension. Interestingly, assessment was a theme that dominated much of the discussion in this school throughout all sessions.

Similarly, analysis of School F's discussion of literature groups revealed that they attributed several values to the use of literature groups, including the role that illustrations played in helping students visualize story events, the importance of students' prior knowledge and experience for interpreting a story, the intertextual nature of reading comprehension—that the reading of one story will be used to construct meaning of a second story, and that when students are writing about what they are reading, their reading comprehension is enhanced. Some of these teachers also explained that these values also served as motivational techniques. Included in this discussion was also the value of incorporating art and music to help elaborate on the themes and ideas in the story.

Another finding is that although as staff developers we tried to direct the conversation toward and around reading comprehension practices, our attempts were continually foiled by teachers' concern for testing, assessment, and grading (Anders, Richardson, & Morgan, 1989). Attempts to present and discuss practices were challenged by questions about how such practices should be graded and whether the use of such practices would make a difference on standardized test results.

DISCUSSION

Literacy researchers care about making a contribution to the quality of reading instruction and the resulting literacy of students. Concurrently, the research community is continually pushed to influence practice by drawing conclusions for teaching from research, as exemplified by the goal of the larger research project from which this study emerged.

Kamil (1984) discusses these issues and delineates four purposes of reading research. Two purposes relate to practice: research to collect data and research to make instructional decisions. He further identifies three groups of reading professionals who shape current trends in reading research, one such group being the "translators," those who have a stake in both experimental work and practice.

However, the translators are in a double bind. To conduct research that is likely to be published in journals that are the usual outlets for reading/literacy researchers, variables must be carefully controlled, necessarily limiting and simplifying the researchers' view of classroom life. Thus, many practices presented in the research literature are far removed from actual practice, often to such an extent that they seem irrelevant to the practicing community. The factors and variables that are controlled in these simplistic designs are likely to be the very ones that matter most to teachers. And although researchers are pushed to tightly explain their theoretical rationale for a particular practice, teachers perceive practices as "working" with several theoretical rationales embedded—rationales that are not necessarily coherent or consistent.

The problem is further complicated by norms and conventions within schools that mitigate the use of empirical knowledge. One such norm is what Lortie (1975) describes as the "individualism" norm. When teachers shared their practices during the staff development meetings, they often included the disclaimer that "this works for me, but it might not work for you . . . you teach differently than I do, and that's OK, it's just that what you do doesn't work for me." A second convention common among these teachers was reluctance to acknowledge their own knowledge and authority. They readily and often deferred to those "from the University," to basal publishers or test makers. Third, terms such as *motivation*, *interest*, and *background knowledge* seemed overgeneralized and were of little use when trying to explain "what works" in the classroom. Finally, the pressure to be accountable for the outcome of each instructional move is apparently paralyzing for these teachers.

These patterns of behavior during the staff development sessions raise several questions. What has happened? Are the programs of teacher education from which these teachers graduated overly simplistic? Are teacher educators/researchers divorced from the reality of the classroom? Is the current organization of schools and schooling at fault? Do teachers and researchers lack a common language?

The comparison between researchers' priorities as explicated in the literature sources and teachers' theoretical and practical priorities as explicated by their discourse suggest one explanation for these patterns of behavior; however, this discrepancy may well be a symptom of a complex problem rather than a cause. That is, those who believe that improving reading comprehension instruction is a matter of injecting research-based practices into teachers' pedagogy may have oversimplified the solution. Teachers' talk, at least in this study, does not seem to acknowledge a one-to-one correspondence between a theory and a practice. Teachers appear to see their practices embedded in several theories at once; therefore, it may be that one theory regarding the reading process and related practices is not sufficient for explaining classroom practices.

It may also be that the discourse analysis did not adequately capture the teachers' thinking; however, methodology to accomplish this purpose is still being developed by researchers. Thus, continued investigation on this topic will likely provide new avenues for analyzing data of this type.

It is tempting to conclude by suggesting that either the research community or the practicing community is at fault; however, perhaps that is not the case. The fault may lie with the fact that teachers' knowledge and language has not been valued and therefore has not been adequately studied. It hasn't been an issue. Kamil (1984) suggests that the role of the translator is one of explaining *to* the practitioner. Surely more needs to be done than explaining. Explaining is not sufficient because researchers do not know enough about the thinking and doing of teachers to know how to help relate classroom experiences and research.

Thus, this report connects with those who believe it is time to open a new arena of research, one that conjoins disciplined inquiry with the study of practice. This arena would require a new way of doing research, one where researchers listen to and value teachers and where the research questions emanate from the ecology of schooling. This type of research may be the missing link in relating theory and practice.

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TEACHING LITERACY STRATEGIES ACROSS THE CURRICULUM: A CASE STUDY AT BENCHMARK SCHOOL*

Michael Pressley
University of Maryland

Irene W. Gaskins, Deborah Wile, Elizabeth A. Cunicelli, and Jacqueline Sheridan
Benchmark School

There were many experimental studies of comprehension strategy instruction during the 1970s and 1980s substantiating that elementary students understand and remember more that they read if instructed to carry out any one of a number of strategies (e.g., summarizing, attending to story grammar elements, activating prior knowledge elements; see Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). There was also experimental validation of some instructional packages that included several strategies, each of which was fitted to some aspect of understanding or encoding of text (e.g., reciprocal teaching of prediction, self-questioning, clarification, and summarization strategies; Palincsar & Brown, 1984). However, few of the experimental studies examined instruction in the context of ongoing academic demands; students in the experimental research usually executed the focal strategy alone rather than in conjunction with other strategies; strategy instruction often occurred without metacognitive embellishment; and flexible and adaptive use of cognitive strategies was rarely emphasized (see Pressley et al., 1990). In contrast, our goal in this investigation was to study strategy instruction in an ongoing school context, when teaching focused on coordinated use of strategies, when it included multiple opportunities for metacognitive embellishment, and when flexible and adaptive use of cognitive strategies was a long-term commitment of the program.

Our particular focus was on strategy instruction at Benchmark School (Media, Pennsylvania), a setting in which strategy teaching has had time to mature. For 2 decades cognitive process instruction has been offered in this school which serves bright underachievers who have difficulties in reading (Gaskins & Elliot, 1991). The success of the institution is apparent from the eventual high school graduation rate. As a group, students experiencing early reading failure are at a 30% to 40% risk for eventual school dropout (Wagner, 1990). In contrast, virtually all Benchmark students graduate from secondary school. Many go on to higher education.

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Student accomplishments and academic achievements were not the main concern in this study, however. We were interested in teaching behaviors during strategy instruction—how teachers teach strategies in realistic classroom environments. In other forums (e.g., Pressley et al., 1991) we have analyzed Benchmark strategy instruction by aggregating over a number of teachers. In contrast, this is a report of an individual, representative case, consistent with our belief that analyses of cases can complement our aggregated analyses by making teaching practices more concrete and comprehensible.

METHOD

Subjects

DW, the teacher in charge of the classroom observed in this work, had taught at the school for 2 years; JS, her co-teacher, was also in her second year at Benchmark. (Neither had taught previously.) Although both teachers did both group and individual instruction, DW's responsibilities were more at the group level and JS's responsibilities involved mostly interactions with individual students. There is more emphasis on DW's actions in this report because she was more the instructional leader for the classroom.

The class taught by DW and JS consisted of 12 boys, each about 10 years of age, all in Benchmark School for at least a year, of average or above average intelligence, and enrolled because of previous reading failure. At the time of the study, most, but not all, were capable of orally reading basals at a Grade 3-second semester level. Even the weakest reader in the class could handle text at this level of difficulty, albeit only with substantial assistance.

Procedure

The class was observed nine times by an outside observer, from 13 March 1990 to 7 June 1990. Visits were 1 to 3 weeks apart. During each visit, the outsider watched writing, reading, and social studies classes, typically amounting to 2¼ hours of instruction. The observer usually sat at the back or the side of the classroom taking notes, moving around the room as necessary to see and hear teaching. Because Benchmark classes are accustomed to visitors, and after a session or two to this visitor in particular, the observer's presence was unobtrusive.

The focus of strategy instruction during the 9-week observation period was text-structure-analysis strategies (e.g., Holley & Dansereau, 1984), including development of maps specifying text relations such as description, cause and effect, and temporal sequence. Semantic mapping was taught as a means of understanding and producing text.

Following each day's observations, the outsider prepared field notes that were member checked (e.g., Lincoln & Guba, 1985) for accuracy by DW and JS, who annotated them, especially noting whether interpretations of their actions were accurate. Field notes were then revised and eventually amalgamated over the nine visits by the observer. The result was the narrative presented subsequently, which was reviewed by the two teachers and an in-school observer who had watched DW's teaching during this period of time. The in-school observer, DW, and JS agreed that the conclusions that follow were veridical with what happened in the classroom. That is, there was clear triangulation (e.g., Mathison, 1988) of the data in that both the participants and two outside observers agreed about the outcomes reported here.

RESULTS

Instruction of Focal Strategies Occurred in Writing, Reading, and Social Studies

Although content taught varied from week to week, the structure of the school day and the nature of student-teacher interactions were consistent across the 9 weeks. DW included instruction of text analysis/semantic mapping strategies in writing, reading, and social studies. Many different adaptations of the strategies were illustrated during instruction and practiced by students. Most critically, regular curriculum content was covered during strategy instruction.

Writing. Writing instruction during spring 1990 focused on different types of expository essays, including descriptive commentaries, compare-and-contrast essays, and construction of prose summarizing historical sequences. As part of these expository assignments, students were required to develop essay topics; search out pertinent information using library sources; construct and order note cards and bibliographic entries; plan an essay in semantic map form; revise semantic map drafts; translate maps into coherent prose; elicit feedback from peers and teachers about what needed to be clarified in drafts of essays; revise essays; construct final drafts; and construct bibliographies to accompany text. Throughout this process, students received feedback and tutoring as needed from DW and JS and occasionally from other teachers who visited the classroom from time to time as part of the instructional day.

Writing was not confined to writing class, however. For instance, DW converted the social studies tests into writing opportunities. For an exam about colonial America, students were provided the topic of the in-class examination essay question. In anticipation of this test, the students prepared semantic maps and practice essays. They received before-the-exam feedback from the teachers about these products. The actual exam required an hour and a half of writing.

Reading. On a typical day, three reading groups met, each composed of four students. Two met with DW; one with JS. Each group met for about 30 minutes daily.

The students read various types of prose with various structures—descriptive sequences, cause-and-effect arguments, and descriptions embedded in cause-and-effect structures. They read articles from *Weekly Reader*, several different basals (usually at the 3/2 level), and an entire multiple-chapter, multiple-topic science textbook on energy. Participation in these reading groups simultaneously exposed students to differently structured texts and to appropriate content, with most readings pertinent to mainstream elementary social studies or science.

During reading lessons, students were given many opportunities to identify the structures of text they were reading, with discussions of alternative ways of analyzing a particular text encouraged. Semantic maps were created for a number of texts through teacher-reading group interaction. Creation of these maps often included substantial updating as reading proceeded. The teacher required more autonomous semantic mapping by students toward the end of the 9-week observation period, with individuals and pairs of students creating maps as they read, which were subsequently shared with the rest of the reading group. Students were also required to use their maps in various ways. Thus, rather than all students reading the last three chapters of the energy text, the labor was divided, with individual students and pairs of students creating semantic maps for each chapter. The students brought their maps back to reading group and provided a summary using their maps as prompts.

Social studies. Process instruction supported teaching of content. The students read a Grade-4 social studies text. Reading the text and attempting a semantic analysis of text was a common homework assignment; the subsequent social studies class periods then involved collaborative student-teacher construction of a semantic map of the text. As the teacher-student construction unfolded on the blackboard, students revised their notes and maps of the text.

Teaching of a Strategy Lesson Proceeded from Teacher-Led Discussion, Explanations, and Modeling of Strategy Use to Scaffolded Student Attempts to Use the Strategy

Many times a lesson was accomplished in a single class period, particularly so in the case of reading. Writing and social studies lessons tended to occur over the course of several days (e.g., an explanation of some variation of semantic mapping on one day, followed by homework, interactive discussion, and use of the strategy in class the following day, and then more homework). Whether single- or multiple-day, there was a consistent structure to lessons. Each began with some teacher-student group discussion of the strategy, with the teacher predominating at this point. The group in interaction attempted to carry out the strategy, the teacher acting both as director of the discussion and a scribe for the group, making a summary of the strategic actions on the board. The goal of instruction was usually clear, often stated explicitly by DW. Feedback about the adequacy of strategy execution was offered often.

As an example, consider one of DW's reading lessons on 27 April 1990. The students had been reading a chapter in the energy text, with a map of the chapter content partially completed. The discussion focused on how to include some other sources of power in the map, including the turbine. As a result of interactive discussion, the turbine was placed under water power as part of a compare-and-contrast chart about turbines versus water wheels. Following this discussion, DW elicited review of strategies students had used to make sense of the text. These included using their hands to construct a simple physical model of some concepts covered in the text, reading and rereading carefully, and making comparisons between various parts of text. Students then continued to read the chapter, working in pairs to construct a mapping of the content. DW asked them to attend especially to how the map helped to make connections between bits of information scattered throughout the text. She offered feedback to students about their evolving maps. On completion of the reading, there was a group discussion. It focused on comparing the maps and the strategies used to analyze the text. After going through two student-constructed maps, DW and the group generated yet a third representation of the text content. DW closed instruction by pointing out that all three constructions adequately represented the text content.

Scaffolding occurred in a number of different ways. For instance, during reading lessons, use of appropriate strategies was prompted frequently. Often, cuing stopped short of telling the student exactly what to do, however (e.g., DW would ask, "What might you do to find the answer to that question?" or "What's the first thing to do with a *Weekly Reader* article?"). When students were working alone at their desks, the teachers would provide prompts as to how they might proceed on their assignment. In short, the teachers were always providing hints to be strategic when students were not strategic. DW and JS never completely released control of students' processing. Nonetheless, there was student progress in autonomous use of strategies. For instance, text structure analysis and construction of semantic maps was very explicitly cued during March, with maps produced only by DW and the students interacting. By the end of May, DW was able to give students an article and ask them to map it, with reasonably good semantic maps produced by the students, either working on their own or with partners. The students had learned a lot about text analysis, although not yet mastering when to deploy the strategies they had learned.

Teaching of the Focal Strategy Was Accompanied by Teaching and Cuing of Other Strategies

Student use of semantic mapping and text analysis, the focal strategies during the 3-month observation, were practiced in conjunction with other cognitive processes. Students were reminded and explicitly instructed to use a number of strategies other than the semantic-mapping procedure. Thus, making predictions about a reading and activating prior knowledge were regular activities. Generation of representational images, looking for text structure elements, and seeking clarification were prompted often. Reviewing and summarizing after reading was encouraged. All the effective comprehension processes that good readers presumably use when they read (e.g., Baker & Brown, 1984) were taught and/or prompted by DW. Moreover, all of the other strategies taught at the school (e.g., decoding, math computational) were cued when a situation called for them.

Students Were Encouraged to Interpret Content for Themselves

DW and JS consistently prompted students to evaluate what they were reading and to compare events in text with events in their own lives. These personal interpretation prompts were mixed with strategy use prompts, so that students were encouraged to articulate use of interpretive strategies with strategies intended to encourage more objective memory and comprehension. In Rosenblatt's (1978) terms, the students were taught to use both aesthetic and efferent strategies respectively.

Student Work Required Use of Strategic Processes

Homework was assigned regularly, often consisting of completion of a strategy-mediated task begun in class (e.g., translating notes into a rough draft of an essay). The expectations for exams were clear, with students taught explicitly to prepare for tests by using the strategies they were learning in class. Grading of homework and exams heavily favored use of strategies. For instance, if the introductory paragraph of a test essay summarized main ideas, points were accumulated. If ideas from the essay planning sheet appeared in the essay, points were added (consulting such planning sheets was permitted during this test). Appearing to use strategies alone could not earn a good mark, however. The essay answers had to reflect knowledge of the social studies content as well.

DW Would Make Use of Errors To Make Points

Errors were viewed as opportunities to explain strategies more fully or restructure knowledge. Learning in this class included overcoming misconceptions, seeking clarification when information was not completely understood, and recognizing that information from authoritative textbooks should not always be accepted at face value. For example, sometimes DW would generate errors to emphasize points. Thus, after students had finished reading an article, DW suggested they construct a descriptive map of it. When she asked whether that made sense to them, all four students indicated that the cause-and-effect relations in the text should be driving map construction rather than the descriptive information. Sometimes DW would feign miscomprehension. This led to extensive analyses by the students to explain the text meaning to DW. DW admitted shortcomings of instructional materials and used those shortcomings as motivation for her process instruction. Thus, when students pointed out that the textbook description of some foreigners in the American revolution (Lafayette, von Steuben, Kosciusko) was very poor, DW agreed and pointed out it was impressive that the students were able to work through the confusion.

Metacognitive Information About Strategies Was Covered

Explanations about how and why strategies improve performance occurred daily and throughout the day. Consider the lessons of 29 March. During writing class, DW covered construction of a compare-and-contrast argument. She established during this discussion that analyzing textbook content in this fashion would provide a head start for studying for tests involving a comparison of different entities. During reading, when students were going over an article on pollution, including coverage of the history of one pollution problem, DW instructed students about trying to understand causal relations between various parts of text, pointing out that finding such connections would make the article more memorable. There were several times when DW pointed out that review was critical if students expected to do well on a test. At one point DW covered the idea that greater study of material covered some time ago was a good idea, since memory of content fades with time. She also pointed out that practicing writing essays about to-be-tested content was good preparation for the test.

Students received a lot of information about where and when to use the strategies they had learned as well as information about how those strategies might stretch to fit new situations. Thus, when students read an article about the planets, there was a discussion about why use of a compare-and-contrast chart would be a better way of representing the content than use of a chart with a central point and nine satellites. One reading group read a fictional story on 17 May 1990. During reading the students constructed inferences from clues in the story, thought about character traits, imaged content, surveyed the text, and made predictions. At the end of the lesson, DW and the students discussed which of the strategies could also be used in reading social studies content. As part of this, they discussed that some strategies are only matched to some types of text. During the last social studies class before the final exam for the year, DW discussed when to construct more and less detailed outlines in preparation for a test.

Flexibility and Adaptation of Cognitive Skills Was Emphasized Consistently

DW made clear that cognitive skills are not rigid rules to be applied inflexibly, but rather extremely adaptive. Throughout teaching of semantic mapping, there was emphasis on alternative representations of the same content. Semantic maps were changed in midconstruction to accommodate new directions in text. DW often displayed several different representations in class; students had multiple opportunities to compare their own representations with those constructed by others.

The emphasis on flexibility pervaded the teaching. For instance, students learned that sometimes the topic of an essay needs to be changed in light of new information that is discovered during library research; predictions about the content of text were only possibilities to be checked against text content; images constructed by students in response to texts varied; there were many potential topic sentences for the same paragraph; and a number of right answers were possible for any essay questions.

Flexibility was also encouraged implicitly by the format of the class. Although DW and JS always had a teaching agenda, the particulars of each lesson were worked out as teaching proceeded. When students seemed not to be "getting it" (i.e., either not coming to an acceptable interpretation of content or not executing a strategy at an acceptable level), the teachers changed tactics. Such sensitivity occurred with respect to the needs of the instructional groups as well as individual children.

Consistent Review

Review of strategies and content was frequent. For instance, when something in an article covered in reading class related to science, social studies, or math content, DW prompted students to notice linkages, if they did not come up with them on their own. Writing class was used explicitly to deepen understanding of social studies content as well as provide practice in writing skills (i.e., students wrote about social studies topics). There were frequent discussions of how strategies learned in one class or applied to one assignment might be used in other classes or on other assignments.

Strategy Instruction Took Place in a Well-Organized Classroom

There were regular routines in DW's classroom. Discipline was handled efficiently and matter-of-factly, although it was rarely required. DW and JS created and used props to facilitate classroom functioning—for instance, all of the semantic mapping strategies were represented on wall charts. Students had a general ethic to be helpful to their peers. There was friendly rapport between teachers and students.

DISCUSSION

One goal of Benchmark School faculty is to cover the elementary content in ways that permit their students to acquire the standard content, with explicit instruction and prompting in the use of strategies intended to promote understanding of new material and completion of daily assignments. Years of such lessons are intended to promote a more general goal, long-term internalization (e.g., Vygotsky, 1978) of the strategies taught and encouraged in class. Years of in-class experience in flexibly adapting strategic procedures to new situations presumably establishes a detailed understanding about when and where various procedures can be applied, as well as how to stretch strategies to fit new situations.

Our confidence in the description offered here is bolstered by complementary data that we are producing using different methodologies. To date, regardless of methodology—for example, the traditional case study (e.g., this research; see Gaskins & Elliot, 1991), intensive and extensive interviewing (e.g., Pressley et al., 1991), or variations of grounded theory analyses (El-Dinary, Pressley, & Associates, in preparation)—we are generating similar conclusions about teaching from studies at Benchmark and other schools offering effective strategy instruction:

1. Such teaching is long-term.
2. Explanations and teacher modeling of one or more strategies occurs in every class.
3. Teacher guidance is the most prominent mode of instruction.
4. Teachers discuss, endorse, and model flexible strategy use.
5. Acquisition of repertoires of effective and complementary strategies is the ideal.
6. Teachers consistently send the message that student thought processes are what count rather than getting a specific "correct" answer.
7. Strategies instruction is integrated with content instruction.

The instructional richness of this classroom contrasts with strategy instruction in most of the related experimental research. Although based on and inspired by previous experimental research, Benchmark instruction is much more complete. A very different type of instruction has been developed at this school than occurred in the comprehension instruction experiments of the last 2 decades. How different Benchmark instruction is from the teaching in the experimental research can be appreciated by considering one of the most widely cited and complete comprehension instructional packages evaluated in experiments during the 1980s, reciprocal teaching (Palincsar & Brown, 1984).

Consider three comparisons between reciprocal teaching and strategy instruction at Benchmark School. First, reciprocal teaching occurred in reading groups; strategy instruction at Benchmark occurs across the curriculum and throughout the day. In contrast, when reciprocal teaching has been attempted in other content areas, it has proven unworkable (e.g., Resnick, 1989), even when those attempting it are reciprocal teaching enthusiasts (Brown & Campione, 1990). Second, reciprocal teaching involves instruction and use of only four strategies—prediction, question-generation, clarification, and summarization. DW and JS were continuously instructing many strategies (and variations of them), even though semantic mapping was emphasized. Third, reciprocal teaching involves a particular type of peer instruction, with teacher input minimized relative to peer input. In Benchmark classrooms, the teachers teach in various ways and so do the peers. That is, there is much more instructional variation in Benchmark classrooms than during reciprocal teaching.

Strategy instruction completely embedded in the curriculum seems to be an important educator adaptation of strategy instruction validated in the experimental studies. Study of Benchmark classrooms and others like them (see Anderson & Roit, 1990; El-Dinary, Pressley, & Associates, in preparation; Halliday & Aulls, 1990) afford the opportunity for understanding how procedures that were formally validated in well-controlled experiments can be translated into real instruction. The special strength of case studies is that they can provide information about prototypical instruction through concrete, easily understood examples.

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ANALYSIS OF THE COMPREHENDING PROCESS WITHIN THE SETTING OF READING RECOVERY LESSONS: NEW INSIGHTS

Billie J. Askew
Texas Woman's University

Reading Recovery is an early intervention program for at-risk first graders. Children work with a trained teacher for an intensive 30 minutes each day. As the child reads and writes whole text, the teacher fosters strategies that will lead to a self-improving system. The ultimate goal is to enable these young readers to use strategies effectively and independently so that they may function successfully in an average reading setting within the classroom.

Reading Recovery teachers are sometimes questioned about the role assigned to comprehension in the program. The work of Marie M. Clay (1979a), developer of Reading Recovery, does not address comprehension as a separate process. Rather, comprehension is assumed to be the focus of a meaning-based program. How, then, do Reading Recovery teachers 'teach' for comprehension? What evidence is seen in lessons that would support a meaning emphasis? Can a notion of comprehension within Reading Recovery sessions be teased out and described?

To set a frame of reference, it seems logical to start with Clay's (1979b) definition of reading, with the assumption that comprehension is implicit in this definition:

> I define reading as a message-gaining, problem-solving activity, which increases in power and flexibility the more it is practiced. My definition states that within the directional constraints of the printer's code, language and visual perception responses are purposefully directed in some integrated way to the problem of extracting meaning from cues in a text, in sequence, to yield a meaningful communication, conveying the author's specific message . . . . You read with anticipation if you are to read with comprehension. (p. 7)

Goodman (1985) argues for an important distinction between comprehension as a product and comprehending as a process. Comprehending is a constructive process that ". . . goes on during reading and even long afterwards as the reader considers and reconstructs what has been comprehended . . ." (p. 831). In the present study, comprehending is examined during the on-line process of constructing meaning from text. Analyses of oral reading behaviors are viewed in relationship to meaning-making as well as to the effect of strategic interventions by the teacher.

Strategic teaching is another assumption of Reading Recovery. Teachers provide meaningful scaffolds (Clay & Cazden, 1990) to support emerging readers in their acquisition of strategic literacy behaviors. Strategies achieve cognitive purposes such as comprehending and are potentially conscious and controllable activities (Pressley & Brainerd, 1985). The acquisition of strategies leads to the ability to monitor or check on oneself, to search for cues to get to the author's message, and to make corrections that affect the meaning of the text (Clay, 1979a). Strategies can be invoked when readers realize that something is not right and they monitor or check on themselves (Brown, 1982; Clay, 1979a). Self-correction behavior is a strong predictor of reading development (Allington, 1983b).

The use of multiple readings of text, or repeated readings, is not a new idea in reading education. There is evidence that rereadings positively affect rate, word recognition (Herman, 1985), and fluency (Carver & Hoffman, 1981; Herman, 1985). However, Dowhower (1987) notes that the effect of multiple readings on comprehension are not as well substantiated in the literature. Because Reading Recovery involves a number of repeated readings of texts over time, the present study responds to the effects of those readings on the comprehending process.

The purpose of the study was to examine and describe teacher and student behaviors during the reading portions of Reading Recovery lessons and to explore how those behaviors change over multiple readings of the same text. The following questions provided direction to the study: (a) What specific behaviors of children offer evidence of the comprehending process, and how do these behaviors change across multiple readings of the same text? (b) What specific behaviors of teachers offer evidence of fostering the comprehending process in children, and how do these behaviors change across a child's multiple readings of the same text?

METHOD

Subjects

The 15 subjects were first-grade children who were receiving Reading Recovery intervention during April and May in Chapter 1 schools within five large suburban districts. Campuses represented ranged from lower- to middle-socioeconomic neighborhoods. Of the 15 subjects, 7 were African-American, 6 were Anglo, and 2 were Hispanic. There were 9 females and 6 males, ranging in age from 6 years 8 months to 7 years 6 months. Subjects were taught by six teachers in training to become Reading Recovery teacher leaders. Seven children were midway through their Reading Recovery program, whereas 8 were soon to be "discontinued" (i.e., they would be returning to the average setting in the classroom).

Materials

"Little books" used in Reading Recovery lessons were the text materials used in the study. These books are generally characterized as using natural language and meaningful context. Books are individually selected for each child to promote the use of present strategies. In a typical Reading Recovery lesson, a child usually reads at least four texts—one novel text, one read for the first time on the previous day, and at least two familiar texts.

Procedures

The six teachers audiotaped several consecutive lessons with the Reading Recovery children with whom they worked until each child had read any one text across at least five lessons. Because familiar texts are generally selected by the child, the time between familiar reading events varied for each child. The five readings were classified as follows: (a) reading of a novel text, (b) reading of the book introduced the preceding day as a novel text and accompanied on the second day by a running record of text reading, (c) third reading of the text, (d) fourth reading of the text, and (e) fifth reading of the text.

The children's oral reading of each text was transcribed verbatim along with the teacher's interventions and prompts. Categories were developed to describe comprehending behaviors. Interrater reliability for the coding system was established by two trained Reading Recovery teacher leaders at .94. Using the transcriptions and the actual audiotapes, the researcher coded student and teacher behaviors. Most of the analysis was done at the point of a miscue or a problem. However, teacher and student extensions or links were also recorded, regardless of association with error analysis.

All miscues and problems with text were recorded. Evidence of student monitoring of miscues was also recorded. Notation was made of any immediate student-initiated self-corrections following a miscue or successful attempts following a problem. Teacher interventions were analyzed for the type of strategy prompt or confirmation offered (monitoring/checking or searching for cues). When teacher interventions led to self-corrections or successful solutions to problems, this interaction was recorded. Teacher prompts for fluency and rereading behaviors were also noted along with teacher praise for strategic attempts on the part of the child. Teacher comments unrelated to miscues or problems were studied for possible links/extensions to support the comprehending process.

Frequency data were totaled for each category according to the five readings of each text. Because each subject read the same text for each of the five readings, controlling for text length was resolved. Subsequent analyses were conducted to look for any unique features within each of the five reading events and any shifts of behaviors across multiple readings. For the most part, data were represented as ratios of behaviors to errors/problems. Descriptions of behaviors of children and teachers offered further elaborations of the findings.

The running record, or the second reading of the text, was not analyzed for teacher behaviors. During this daily Reading Recovery reading event, children read without interruption while the teacher took a careful record of the child's behaviors.

RESULTS

Comprehending Process

Not surprisingly, considerably more miscues/problems were observed during the reading of the new text than on any rereadings of the text on subsequent days (see Table 1). The percentage of uncorrected miscues and unresolved problems averaged

Table 1

Index of Children's Comprehending Behaviors Across Multiple Readings of Text

		Comprehending Behaviors		
Reading Event	Problems/Errors[a]	Monitor[b]	Unprompted Self-Correction[b]	Prompted Self-Correction[b]
New Text	246	.74	.38	.33
Running Record	120	.77	.58	.03
Third Reading	74	.77	.61	.15
Fourth Reading	57	.82	.74	.05
Fifth Reading	52	.71	.73	.06

[a] Expressed as frequency of occurrence. [b] Expressed as ratio of behaviors to numbers of problems or errors.

91% on the first reading, falling within an instructional range as defined by an oral reading accuracy rate of 90–94%. Each successive rereading yielded a higher accuracy rate, allowing for multiple opportunities for independent reading of text.

Monitoring and searching for cues. Evidence of monitoring generally included self-corrections, repetitions, hesitations, appeals, and additional trials. Although there were not large variances in monitoring behaviors across multiple readings, familiarity with text did seem to affect monitoring rates. On the fifth reading, many of the errors not monitored were those that did not affect meaning within the context of the story.

When children monitored errors, they seemed to be using one or more cue sources (meaning, structure, or visual information) to notice dissonance between the text and their errors. Some of the monitored errors were clearly a mismatch between the meaning and the substitution, whereas others were the result of structural or visual mismatches. There was wide variance among individuals as to which cue source(s) they tended to rely upon to monitor, to continue searching, and possibly then to self-correct an error. In an earlier study (Askew, 1988), conducted at the beginning of first grade, the data showed less use of visual information to monitor. In the present study, however, children were approaching the end of their first-grade year and all cue sources seemed to be operating to test for a mismatch.

Self-correction. Self-correction behavior was clearly affected by repeated readings (see Table 1). On the first reading of text, the number of self-corrections prompted by the teacher was similar to the number of self-corrections initiated by the children. Strategy interventions by the teacher dramatically affected the self-correction rate. There was a strong trend toward student independence in self-correction and problem solving on each consecutive reading of the text. Increased student independence across multiple readings was also supported by the reduction of unresolved problems that resulted in the teacher "telling" the correct response.

Fluency. Although fluency and phrasing were not objectively examined in this study, readings three to five became increasingly more fluent for all children, supporting Allington's (1983a) suggestion that repeated readings may assist in developing fluency. Children read more rapidly, resolved problems more quickly, added phrasing and expression to their oral delivery, and generally read the text without many interruptions. Errors made during these familiar readings were generally still meaningful. For some children, fluent reading led them to return to the natural use of their own language structure even if they had resolved the mismatch in earlier readings.

Linking and extending meaning. Child-initiated extensions of meaning were more frequent during the first reading. Examples of comments and questions that gave evidence of the construction of meaning included the following:

> It's like in that duckling book. "Me, too" said Rosie. See, it says the same thing but it doesn't say duckling. (relating one text to another)
> I don't see any staircase. (trying to resolve conflict)
> We said that a while ago—that she was not going to get a bath, but she was going to get a shower. (confirming a prediction)
> That looks like a bathtub. (attempting to resolve a text confusion)
> What are sticky buns? (requesting conceptual meaning)
> You know what? My turtle has a tail. I've got a baby turtle. (relating to personal experience)

Teacher Interventions

Prompting for student monitoring. Strategy intervention to prompt for monitoring occurred most frequently during the first reading of the new text (see Table 2). Because teacher interventions are not part of the running record, no teacher behaviors can be reported for this reading event. Opportunities to prompt for monitoring did continue during the third, fourth, and fifth readings, although on a much reduced level. Sample teacher prompts to encourage students to monitor and check on themselves were as follows:

> Try that again.
> There is something not quite right here. You can fix it up.
> What did you notice? Why did you stop?
> Did it match?
> Were you right?

The teacher's attention to monitoring during the first reading seemed to reduce

Table 2

Index of Teacher Interventions to Promote Comprehending Behaviors Across Multiple Readings of Text

	Teacher Behaviors						
Reading Event	Prompt Monitor	Prompt Search	Prompt Fluency	Prompt Reread	Confirm Monitor	Confirm Search	Praise
New Text	.33	.90	.04	.10	.12	.17	.24
Running Record[a]	0	.02	.01	.02	.01	0	.04
Third Reading	.13	.25	.15	.07	.32	.26	.28
Fourth Reading	.18	.11	.28	.05	.15	.11	.40
Fifth Reading	.04	.10	.25	.04	.08	.04	.33

Note. Frequencies are expressed as ratio of behaviors to number of problems or errors.

[a] Teacher interventions are not part of the running record event.

the amount of prompting needed on subsequent readings. Perhaps by attending to the errors that would have affected the processing of text during the first reading, the teacher was able to choose not to attend to some of the errors on subsequent readings based upon the quality of the error. Interestingly, structural errors accounted for many of the errors not monitored by the teacher. These structural errors did not interrupt the meaning or even the flow of the reading; rather, they were generally dialectical responses when oral reading became more fluent and natural.

In contrast to the profile of teacher prompting for monitoring, the teacher's *confirmation* of monitoring was more evident during the third reading of the text. Sample confirmations of monitoring are shown below:

> Did you fix up the hard part? You sure did. Good for you, Jamie.
> Good. I like the way you checked on that and changed it.

Prompting for student searching. Teacher intervention to prompt children to search for cues (meaning, structure, and visual cues) was dramatically higher during the new text reading than for subsequent readings. Sample prompts are as follows:

> Does that sound right?
> What could you try?
> That would make sense there, but does it look right?
> Try that again and think what would make sense in that sentence.

Again in contrast to prompting behaviors, teacher *confirmations* of searching behaviors increased during the third reading and leveled off for readings four and five. There was evidence, then, that searching prompts were used more frequently with unfamiliar text, whereas confirmations were more often used with familiar text reading. Examples of searching confirmations by teachers are shown below:

> I'm glad you realized that didn't make sense.
> Good reading. You noticed when it didn't look right and you went back and fixed it.
> You thought what would make sense, too. Great reading.

Prompting for fluency. Interestingly, as the teacher prompts for monitoring and searching dropped over time, the prompts for fluency increased. As the children's reading became more accurate and less problematic, teachers sought to prompt more frequently for fluency. Examples of fluency prompts included the following:

> Okay, now read it like he said it.
> Now I want you to go back and read it like you are talking—just like you would to your brother.

Teacher links and scaffolds. Teacher comments and questions to make meaning links and provide scaffolds for concepts and contexts were observed more frequently during the first reading, but continued to be observed in subsequent readings, except for the second reading which does not invite teacher comments or extensions. Questions and comments were woven throughout the lesson to bridge concepts and make connections between the known and unknown, as well as to encourage the child to make predictions about meanings. Although not included in this study, book introductions in Reading Recovery are also carefully crafted to provide meaningful scaffolds for the child. Sample teacher comments that linked content across pages and across text and promoted meaningful predictions included the following:

What did the mouse ask?
Let's see what happened one day to Mr. Vera.
Look at that. They sent her all those cards so that she will get well soon.
They were glad that the gate and door were open, weren't they?

Some teacher comments/extensions related to meanings of words or concepts presented in text. Some samples were as follows:

They are kind of like cinnamon rolls, I guess. (in response to the question, "What are sticky buns?")
Behind means the same thing as in back of, doesn't it?

Samples of teacher's comments about textual characteristics that may assist the reader with the given text as well as future texts include the following:

This starts like a typical story we read sometimes—once upon a time . . . .
And look at those talking marks. Just like you had in your story.

Examples of comments and questions to invite the reader's personal responses and to link to the child's background were as follows:

Why did you laugh?
Oh, you've got a baby turtle? I wonder if your turtle's as smart as the one in this book.
Have you ever had sausages to eat?

DISCUSSION

Based on these data, there is support for all three types of reading within the reading lesson: new text, running record text, and familiar text. Each type of reading seems to foster somewhat differing aspects of the comprehending process.

New Text

During the reading of the new text, much "reading work" takes place. There is an opportunity during this analysis of novel text to study overt evidence of strategy use by children. Children become problem solvers while teachers provide scaffolds that may be needed at the moment. The following example offers evidence of the type of work done by children during the reading of a new text and of the role of the teacher in promoting problem-solving strategies:

Text: She's home in bed with a cold in her head.
(Cowley, 1987, p. 7)

C: She's home in bed w/it/h/ wit a (pause)
T: Why did you stop? Does it make sense so far?
C: No.
T: It's not making sense so far, is it? Okay, so let's go back and see if we can work it out.
C: She's home in bed (pause) waiting??
T: Does it look like waiting?
C: No.
T: What can you say? Check it out.

C: w/it/—with?
T: Try "with" and see if it works.
C: with a cold in her head. Yes!
T: Now put it all together.

The first reading of the book encourages the child to apply strategies to new contexts and allows the teacher to intervene according to the child's need for strategy support. Strategy prompts during the first reading seem to affect the child's self-correction rate and his or her future reading of a given text.

Running Record or Second Reading

The second reading of the book, or the "running record," allows the child to read a text without interruption or intervention. This reading further offers the teacher an opportunity to assume the role of an informed observer and objective recorder of the child's reading behaviors. The running record provides a clear blueprint for immediate decisions about two or three strategic teaching points that will follow the reading of the text. The analysis of miscues and self-corrections in the running record offers evidence of cue use and strategy work—reflections of the comprehending process.

Familiar Rereadings

Familiar rereadings of text offer opportunities for the children to successfully orchestrate their use of strategies "on the run." For children to be able to experience the power of their own ability to monitor, search text further, and make their own corrections quickly is clearly an important part of the comprehending process.

Familiar readings also offer children opportunities to read fluently and independently, allowing them to read "like a reader." They experience a sense of success and satisfaction. At least in this study, it appears that familiar readings allow teacher behaviors to shift from prompting for strategies to confirming and praising strategic behaviors. More opportunity for attention to fluency also encourages children to put the meaning back in text on which they had previously done strategic problem solving.

Further Discussion and Conclusions

During all reading events, there was evidence of teacher scaffolding to promote meaning at a macro-level and to encourage personal enjoyment of text in addition to the progressive problem solving on text to build meaning. Further study of this teacher behavor and its effect on student behaviors should prove interesting.

Although limitations of the study prohibit broad generalizability, some tentative conclusions can be drawn. Evidence of the comprehending process is seen throughout the Reading Recovery lesson. Recording the students' reading behaviors during oral reading of text and the teachers' responses to those behaviors provides evidence of a ". . . message-gaining, problem-solving activity, which increases in power and flexibility the more it is practiced" (Clay, 1979a).

Opportunities for student behaviors and teacher interventions seem to change when the relative familiarity of the text is considered. This study offers support for the practice of repeated readings of meaningful texts by young at-risk readers. This issue merits further examination in light of typical early reading instruction in which texts are often read only once, and children rarely have the opportunity to practice their problem-solving strategies.

The findings of this study support the need to take a closer look at multiple factors within the instructional setting that may contribute to the comprehending process of emerging at-risk readers: a unique combination of meaningful text, strategic teaching for student problem solving, teacher scaffolding and linking to promote successful attempts at meaning making, and opportunities for children to solve problems independently. There is also support for a balance between time for children to do "strategic reading work" and time for children to orchestrate those strategies with fluent reading.

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PREDICTION TRAINING AND THE COMPREHENSION AND COMPOSING PERFORMANCE OF FOURTH-GRADE STUDENTS

Myschelle W. Spears
Howard University

Linda B. Gambrell
University of Maryland

Reading and writing have been described in the literature as acts of composing and comprehending (Flood & Lapp 1987; Squire, 1983; Tierney & Pearson, 1984). Reading and writing are *interactive* processes that share certain linguistic and cognitive similarities (Flood & Lapp, 1987). Wittrock (1983) has hypothesized that effective reading and writing involve generative cognitive processes, and that readers and writers create meaning as they build relationships between the text and what they already know.

Prediction, as a learning strategy, is defined as a person's use of knowledge about language and the context in which it occurs to anticipate what is coming in oral or written discourse (Harris & Hodges, 1981; Smith, 1978). Prediction involves learners in the generation of predictions and in the active evaluation or validation of these predictions. Anderson (1976) found that procedures which encourage the reader to predict facilitate learning. Prediction arouses students' interest (Mason & Au, 1986; Nichols, 1983), helps students focus on details (Ferguson & Kennedy, 1985; Wagner, 1984), and helps students set purposes and increase their comprehension (Cramer, 1970; Freeman, 1982; Shanahan, 1985). The act of predicting represents an anticipation of meaning (Afflerbach & Walker, 1990), which plays an important role in both the comprehending and composing processes.

One useful framework for teaching students the use of the prediction strategy has been proposed by Nichols (1983). He suggests the development of prediction guides which are written by the teacher and are used by the student. The teacher lists statements related to the story or passage to be read. The student reads the statements and indicates those statements (predictions) which they believe will be answered in the text. Following silent reading of the text students indicate which predictions were upheld in the text.

Although recent research suggests that strategy training is an effective means for improving comprehension skills (Duffy & Roehler, 1987; Valencia & Pearson, 1988), only a few studies could be identified which investigated prediction as a comprehension strategy (Ferguson & Kennedy, 1985; Fielding, 1987; Freeman, 1982; Shanahan, 1985). No studies were identified which investigated the role of prediction in the composing process.

The purpose of the present study was to examine the effects of prediction training on the reading comprehension and written composition performance of fourth-grade students. Specifically, the study sought to determine whether the performance of students who received prediction training would differ from that of students in a comparison group (rereading) on the following reading and writing tasks: (a) story recall, (b) story generation, and (c) number of relevant predictions. The major hypothesis underlying this study was that prediction training would provide students with a personalized framework for anticipating story meaning, thereby enhancing both the comprehending and composing processes.

METHOD

Subjects

Fourth-grade students attending two private elementary schools in an urban school district were the subjects in this study. The socioeconomic levels in the schools ranged from lower-middle to middle class. Both schools represent a wide cross-section of social, ethnic, and economic diversity. To be eligible for the study, subjects had to have scores of at least 3.0 on the reading section of the Iowa Tests of Basic Skills (Hieronymus, Hoover, & Lindquist, 1986). Forty subjects who met the criteria for inclusion in the study were randomly assigned to one of the two treatment conditions, prediction or reread.

Materials

The materials used in this study consisted of six stories, five prediction guides, and training scripts.

Stories. Six stories were chosen from the *Reader's Digest Reading Skill Builders* (1960). All stories were written on the third-grade level according to the Fry Readability Scale (Fry, 1968). The stories were all narrative in style and consisted of approximately 420–600 words in length. Three stories were used for the three training sessions, and three stories were used for assessment.

Prediction guides. Prediction guides (Nichols, 1983) were developed by the researchers and a panel of four teachers for each of the three stories used in the training sessions. Each prediction guide consisted of a set of 10 prediction questions (5 text-based and 5 reader-based).

Training scripts. To ensure uniform instruction across the two treatment conditions (prediction, reread), training scripts were developed. One script was written for each of the 6 days of the study. The scripts were piloted for clarity of language and clearness of instructions with twelve fourth-graders who did not participate in the study.

Procedures

Subjects were randomly assigned to one of two treatment conditions: the prediction training condition ($n = 20$) and the reread condition ($n = 20$). Both the prediction and reread groups participated in three sessions (45 minutes each) of training. The first author conducted all training and testing sessions. Training scripts were used to ensure uniformity of time, material, content, and instructions across treatment groups.

Prediction training condition. On Day 1, subjects in the prediction training condition were informed that they would be learning to use the prediction strategy to "help you understand and remember what you read." Four basic steps of the prediction strategy were emphasized: getting clues, predicting, reading, and checking. The continuous use of the prediction strategy throughout the reading of a piece of text was emphasized. Students were informed that they would be using prediction guides that would show them good examples of prediction questions. Students were then given a booklet with a story (divided into two sections) and two accompanying prediction guides (one for each story section). Each prediction guide consisted of (a) 10 prediction questions; (b) prereading instructions: "Before you read the story see how well you can predict what you are going to learn from the story. Place a check next to every prediction question you think will be answered in the story;" and (c) postreading instructions: "Put a check next to all the prediction questions you are able to answer now that you have read the story." After reading the story and completing the prediction guides the students were again reminded of the four basic steps in the prediction strategy and the importance of using prediction throughout the reading of a text.

Day 2 of training was identical to Day 1, except that a new story and new prediction guides were used. On Day 3 of the training the students read one story and completed one prediction guide. Students were then asked to render a written free recall of the story they had just completed reading (free recall task).

On Day 4 students read a story (divided into three sections) and then, after reading sections 1 and 2, responded to the following: "What do you think will happen next? Write as many predictions as you can," (immediate prediction task). Students then completed the story by reading section three. Students were then given another short story to read and were asked to respond to 10 questions (cued recall task).

On Day 5 students were given a story starter and were instructed to "write your own story using the title and opening sentences below," (story generation task).

Two weeks later, on Day 6 of the study, students were again given a story divided into three sections. They were instructed to read sections 1 and 2 and then respond to the following: "What do you think will happen next? Write as many predictions as you can," (delayed prediction task). Students then completed the story by reading section three.

Reread training condition. The control group participated in the read-reread strategy which is frequently used as a comparison group treatment in reading studies (Kardash, Amlund, & Kulhavy, 1984). Studies conducted by Kardash, Amlund, and Kulhavy (1984) and Todd and Kessler (1971) have suggested that rereading is an effective strategy for increasing comprehension.

Time, stories, and procedures used in the reread training condition were consistent with those used in the prediction training condition, except that following the silent reading of the story the students were asked to use the reread strategy. To ensure that time was equivalent across the two treatment conditions, two questions were used at the conclusion of the rereading. The questions used for discussion were, "Who can tell me what the story was about?" and "What did you learn from the story?"

Design and Data Analysis

The design of the study was the posttest-only control group design. The independent variables were the prediction and rereading treatments, and the dependent variables were free recall, cued recall, story generation, and number of predictions immediately after training and 2 weeks following training.

Four certified classroom teachers were trained by the first author in the procedures for scoring free recall, number of predictions, and story structure elements. Interrater reliability among the four raters was established using 25% the protocols. Interrater reliability for the scoring of the number of propositions on the free recall task was established at .95. The score on the cued recall task represented the total number of correctly answered questions. A pool of acceptable answers to the cued recall questions were generated by the two authors and used for scoring student responses. On both the immediate and delayed prediction task, subjects received one point for each text-relevant prediction generated. Interrater reliability for the scoring of text-relevant predictions was 100%. The story generation task was scored according to the number of story structure elements occurring in each story (Morrow, 1988). The interrater reliability for the scoring of story structure elements was established at .94. All scorers were blind to the treatment condition for the scoring of the free recall, cued recall, number of predictions, and story structure elements.

RESULTS

Analysis of covariance procedures were employed to test for significant differences between treatment groups. Scores from the Iowa Tests of Basic Skills, reading, were used as the covariate.

Analysis of covariance procedures revealed statistically significant differences on the immediate prediction task [$F(1, 32) = 5.00$, $p < .05$], the story generation task [$F(1, 32) = 6.36$, $p < .05$], and the delayed prediction task [$F(1, 32) = 10.88$, $p < .05$] in favor of the prediction training group. There were no significant differences on the free recall [$F(1, 32) = 2.87$, $p > .05$] and question-response tasks [$F(1, 32) = .243$, $p > .05$]. Means and standard deviations are presented in Table 1.

DISCUSSION

This study was designed to investigate the effects of prediction training on fourth graders' comprehension and composing performance. Students who received predic-

Table 1

Means (and Standard Deviations) for Free and Cued Recall, Story Generation, Immediate Prediction and Delayed Prediction

	Prediction Group ($n = 20$)	Reread Group ($n = 20$)
Free Recall	15.80 (5.31)	19.15 (6.92)
Cued Recall	8.50 (1.53)	8.70 (1.26)
Story Generation	4.30 (.57)	3.85 (.67)*
Immediate Prediction	4.75 (2.20)	3.55 (1.19)*
Delayed Prediction	7.50 (3.82)	5.30 (2.13)*

* Significant at the .05 level.

tion training outperformed the reread group on generating predictions about stories they were reading, immediately after training and 2 weeks following training. The prediction group was also superior to the reread group on the story generation task. No significant differences, however, were found with respect to free and cued recall performance following story reading.

Many researchers have stressed the central role of prediction in the reading process (Irwin, 1986; Olshavsky, 1978). It is becoming apparent that both good readers and good writers use various event and text structure expectations (Irwin, 1986). When using the prediction strategy, readers and writers appear to use what they know about the topic, the type of text, the author's purposes, and their own purposes to make predictions about content of the text.

The major finding of this study provides support for the hypothesis that prediction plays an important role in the composing process. This study provides evidence that fourth-grade students' ability to generate text-appropriate predictions about what they are reading can be significantly improved with brief training and, most important, that the benefits are maintained up to 2 weeks after training. The results in favor of the prediction group on the delayed prediction task suggests that students were able to transfer the prediction training to a subsequent task. This finding provides support for the transfer value of training students in the prediction strategy.

Prediction training resulted in superior performance on a composing task. Students in the prediction training group wrote stories which contained more story structure elements than students in the reread group. When students engage in predicting story information or events they are generating their own ideas, based on knowledge of the world. Prediction appears to be closely linked to the generation and elaboration of ideas (Afflerbach & Walker, 1990; Irwin, 1986). This may explain why the prediction training group outperformed the reread group on the composing task.

There were no significant differences between the prediction and rereading groups on the free and cued recall of what they read. One possible explanation for this finding is that both strategies, predicting and rereading, appear to enhance reading comprehension. Rereading has been shown to be an effective strategy for increasing comprehension (Kardash, Amlund, & Kulhavy, 1984; Todd & Kessler, 1971), and, for older students, to improve both the quality and quantity of recall of text (Amlund, Kardash, & Kulhavy, 1986).

It is important to note that the prediction training in this study did *not* provide students with opportunities to generate or write their own predictions. Prediction guides were provided which modeled prediction questions. Only at the point of the first assessment task were students asked to generate their own predictions about a story they were reading, and then 2 weeks later they were asked to read another story and generate predictions. The results of this study suggest that training which focuses on student *recognition* of predictions enhances students' ability to *generate* their own text-appropriate predictions.

In summary, it appears that the employment of the prediction strategy provides a personal framework for the integration of knowledge for the composing process. The results of this study suggest that prediction may be a valuable generative learning strategy for enhancing the composing performance of young children. In addition, it appears that prediction training has direct, beneficial consequences on students' ability to generate text-appropriate predictions when reading and writing.

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ELEMENTARY STUDENTS' USE OF IMAGERY IN DEVELOPING MEANING IN LITERARY TEXT

Bonnie C. Konopak
Louisiana State University

Nancy L. Williams
University of North Carolina at Charlotte

Douglas M. Granier
Vanderbilt University

Susie Avett and Karen E. Wood
University of North Carolina at Charlotte

In studying response to literature, educational research has begun to address the important role of imagery in the interaction between the reader and the text (e.g., Cothern, Konopak, & Willis, 1990). According to Paivio (1986), both verbal cues and personal imagery influence a reader's comprehension; that is, text cues trigger images which evolve as additional text is encountered. Further, Sadoski, Goetz, Olivarez, Lee, and Roberts (1990) suggest that the generation of images during reading may be a critical component in the way a reader "lives through" a text. That is, "imagination in reading involves the power of reproducing images stored in memory under the suggestion of associated language or of recombining former experiences to create new images that vitalize and animate the text" (p. 56). Thus, construction of meaning is a result of both data-driven (text cues) and concept-driven (reader knowledge) processes (Katz, 1987).

In studies investigating readers' response to text, researchers have found that imagery is a critical factor in text recall. Sadoski and his colleagues (Sadoski, Goetz, & Kangiser, 1988; Sadoski et al., 1990; Sadoski & Quast, 1990) examined adult readers' reports of imagery, importance, and affect in text read and found that the three constructs were interrelated. In addition, readers were similar in their perceptions of plot importance and their experiences with imagery and affect during their reading. Further, in studies examining the content of readers' response to text, investigators have found that recall varies according to the degree of convergence/divergence of the readers' images. For example, Cothern et al. (1990), in studying young readers' images of literary characters, found that adolescents recalled similar explicit text information but generated elaborations that differed.

Based on these studies, the present research examined upper elementary students' recall of text following instruction and practice in imagery use. Specifically, the purpose was to investigate the frequency and content of *text explicit* (directly from the text) and *text implicit* (from both the text and prior knowledge) idea units generated (adapted from Pearson & Johnson, 1978). It was hoped that imagery used as an instructional vehicle would encourage students to develop meaning beyond a literal level by associating new information with their own experiences (Paivio, 1986).

In addition, a children's short story was selected as the text because it provided both specific and ambiguous information about important characters and events, thus allowing for elaboration in meaning development. According to Golden and Guthrie (1986), given an ambiguous text, a reader uses several sources to fill in the gaps: prior knowledge, experiential background, membership (real or perceived) in multiple communities, and the context of the reading situation. By using the short story, the researchers hoped to examine the influence of imagery on the students' recall of story elements.

Finally, the researchers attempted to examine how imagery affected students' interest in the literary text, as well as in the lessons incorporating imagery practice and use. For the purposes of this study, a research-suggested procedure of pre-, during-, and post-reading activities was used. These activities were both individual and shared to conform to the social context of classroom learning.

METHOD

Subjects

Subjects were 42 fourth graders enrolled in two intact classes at different public schools. Within each class, students first were stratified by reading ability according to their standardized reading test scores (Stanford Achievement Test and California Achievement Test, respectively). Then they were randomly assigned to an imagery instruction group ($n = 21$) or a traditional instruction group ($n = 21$). Reading scores for the imagery group included (a) SAT: $m = 69.25$ ($SD = 24.73$) and (b) CAT: $M = 62.00$ ($SD = 21.52$). Reading scores for the traditional group included (a) SAT: $M = 68.58$ ($SD = 26.97$) and (b) CAT: $M = 69.14$ ($SD = 28.47$).

Materials

Instructional materials included an 1,100-word short story, "Willie's Bad Night," taken from a children's anthology (Lawson, 1976). The story described the adventures of a fieldmouse who, after an accident, was rescued and cared for by a family in a country home while his animal friends anxiously searched for him. It was selected as being appropriate for, and unfamiliar to, these students by their classroom teachers and the researchers. Further, it contained both explicit and implicit descriptions of the characters, setting, and events to allow for similarities and differences in imagery development.

In addition, six short comprehension questions were developed, based on elements in the story. Each question asked the students to describe important characters or events, such as "Describe the search for Willie when he did not return to the burrow" and "At the end of the story, describe how Tim McGrath felt about the lawn." The purpose of these questions was two-fold: (a) they focused both groups' attention to the same elements in the story, the basis for later group discussion, and (b) they were open-ended in that students could respond with both text explicit and text implicit ideas.

Assessment materials included two posttest measures, a probed recall and an affective task. The probed recall consisted of eight questions: (a) seven short phrases concerning the characters, setting, and events in the story, and (b) one question concerning the author's intent in writing the story. Students were asked to write what they could remember about the seven phrases and to explain the author's intent. The affective task included questions on how well students liked the story and their lessons; students were asked to indicate their interest on Likert-type numerical scales ranging from 1 (low) to 5 (high). In addition, students were asked to provide explanations of their numerical response.

Procedure

The experiment was conducted over 4 days, with 3 days for instruction and 1 day for assessment, during each class's 50-minute reading or language arts period. For instruction, the groups met in separate classrooms, either with their teacher or a researcher who were randomly assigned to groups; for assessment, the two groups met together with both instructors present. Instruction was based on researcher-developed scripts that focused on pre-, during-, and post-reading activities and equated time on task for both groups. The two groups generally followed the same procedure, with the imagery group receiving instruction and practice in imagery usage in place of more common tasks.

On Day 1, students prepared to read and then read the first half of the story. For the imagery group, the instructor gave a brief description of the story and its author and led a group discussion on the students' experiences with small wild animals living in the country. Next, the instructor introduced the notion of imagery and its use in enhancing understanding. Students were asked to create images in their minds of familiar objects (e.g., a rose, a turkey cooking, an athlete performing) and to sense how their images looked, sounded, felt, and smelled; then these images were shared with the group.

Following this activity, the instructor presented six vocabulary terms, chosen by the researchers as being pertinent to the story as well as being highly imageable. These included: Kentucky Bluegrass, folks, hearth, burrow, mole runs, and to roll a lawn. Students were asked to image each word and to share these images, as well as possible definitions, with the group. The instructor next guided students to definitions appropriate to the story context and then asked that they write the words and definitions and draw their images for study notes. Finally, students were given the first half of the story to read silently and the first three short comprehension questions to complete following their reading. All stories, questions, and study notes were collected in separate student folders.

The traditional group followed the same procedure without the instruction and practice in imagery use. The instructor first introduced the story and activated students' prior knowledge, presented and discussed the six vocabulary terms, and asked students to copy the vocabulary information for study notes. Then students read the first half of the story and completed the three comprehension questions. Again, all materials were gathered in separate student files.

On Day 2, for the imagery group, the instructor first reviewed the previous day's activities, emphasizing the use of imagery and calling upon students to share their images of the first half of the story. Then students were asked to predict the conclusion to the story, imaging the characters and events and sharing these images with the group. Finally, students read the second half of the story and completed the final three comprehension questions. All materials were collected in the student folders following the reading.

For the traditional group, the instructor also reviewed Day 1's activities, including summarizing the first half of the story and discussing the vocabulary words. Then students predicted how the story would end, read the second half of the story, and completed the comprehension questions. Again, all materials were gathered in student files.

On Day 3, the instructors returned the students' folders and then randomly divided each group into two smaller groups to discuss the story and responses to the six comprehension questions. The imagery group students were asked to share their written responses, including images associated with these responses. The traditional group students were only asked to share their written responses. At the end of the discussion, all student folders were collected.

On Day 4, both groups met in their intact classes to complete the posttest measures. Students first were given the probed recall and asked to write any information they had on each phrase. Then they were given the affective task and asked to (a) indicate their degree of interest in the story and in the lessons by circling the appropriate number on each scale, and (b) explain their numerical choices. All students completed these measures within each class's 50-minute period.

Scoring. Probed recall responses on the seven phrases first were parsed into idea units (e.g., mouse = 1 idea; adventurous mouse = 2 ideas); then the total number of ideas was summed for each group. Next, each idea unit was labeled as text explicit (information directly from the text) or text implicit (information combining text and reader knowledge); then the total number of text explicit ideas and the total number of text implicit ideas were summed for each group. Two raters parsed one-fourth of the probed recalls into idea units; percentage of agreement was 90%. Both raters then labeled these idea units as text explicit or text implicit; percentage of agreement was 85%. For both scoring procedures, differences were resolved through discussion; then one rater completed the scoring.

Finally, each response to the eighth question on the author's intent was classified into common categories for each group by the two raters. Because the author's intent (a) had not been explicit in the text and (b) had deliberately not been included in the instructional scripts or materials, no categories were set prior to scoring. For scoring, the raters listed all the responses, noted categories as they emerged from the data, and jointly completed the classification procedure. Percentages of responses in each category were then determined for each group.

Table 1

Means (and Standard Deviations) of Idea Units Recalled By Groups

Group	*n*	Explicit	Implicit	Total
Imagery	21	11.76 (7.40)	9.52 (3.79)	10.64 (5.91)
Traditional	21	12.05 (4.49)	4.19 (1.94)	8.12 (5.24)

Affective responses included summing the numerical responses for the interest in story question and the interest in lesson question for each group. Following, the written explanations for each question were classified by common categories for each group by the two raters; percentages of each category were determined for each group.

RESULTS

Data analysis for the idea units on the probed recall task included a two-factor ANOVA, using a 2 (group: imagery/traditional) × 2 (level of response: text explicit/text implicit) design; analysis of the responses to the question on the author's intent included descriptive statistics. Data analysis on the affective task included separate one-way ANOVAs for the numerical responses and descriptive statistics for the explanations.

On the probed recall task, results showed statistically significant main effects for group, $F(1, 40)=4.15$, $p<.05$, and for level of response, $F(1, 40)=37.47$, $p<.0001$. As seen in Table 1, the imagery group's mean recall for all idea units was higher than the traditional group's mean recall; in addition, the mean number of text explicit ideas recalled was greater than the mean number of text implicit ideas recalled. Further, there was a statistically significant interaction between these factors, $F(1, 40)=11.61$, $p<.002$, indicating that, while both groups had similar text explicit mean scores, the imagery group's text implicit mean score was greater than the traditional group's mean score.

On the question concerning the author's intent in writing the story, students in both groups generally responded with similar explanations, although percentages of these explanations varied somewhat by groups. As seen in Table 2, almost twice as many imagery students than traditional students focused on the need to be careful or "watch where you are going." A small percentage of students in both groups stressed

Table 2

Percentages of Explanations on the Author's Intent By Groups

Group	*n*	Watch Where You Are Going	Help Animals in Trouble	Telling a Good Story
Imagery	21	58%	12%	30%
Traditional	21	33%	20%	47%

Table 3

Percentages of Explanations on Affective Measures Across Groups

Explanation	Percentage
Story Interest	
Did like story	65%
Did not like story	35%
Lesson Interest	
Did like lesson	68%
Did not like lesson	32%

the need to help animals when they are in trouble. Finally, one-third of the imagery group and nearly one-half of the traditional group responded that the author wanted to tell a good story.

On the affective task, results for the numerical responses showed no statistically significant differences between the groups on either story interest or lesson interest (all $ps > .05$). On story interest, the imagery group's mean response was 3.90 ($sd = 1.26$), whereas the traditional group's mean response was 3.52 ($sd = 1.36$). On lesson interest, the imagery group's mean response was 3.67 ($sd = 1.39$), whereas the traditional group's mean response was 3.67 ($sd = 1.49$).

On the explanations for the numerical responses, students in both groups generally indicated that they liked or did not like the story or lessons, as indicated in Table 3. For story interest, approximately two-thirds of all students liked the story because it was exciting, contained animals, and/or had humorous parts. The remaining third did not like the story because it was boring, too long, and/or hard to understand. For lesson interest, over two-thirds of all students liked the lessons because they were fun, allowed the students to talk in class, and/or contained interesting activities; in addition, one-quarter of the imagery group who liked the lesson stated that they enjoyed being able to imagine or visualize the story. The remaining students did not like the lessons because they were boring, confusing, and/or too hard.

DISCUSSION

Although the purpose of this research was to examine the effects of imagery instruction and practice on students' story recall and affective responses, the results are limited by the small sample and by the use of one grade level and one story. In addition, whereas the recall measure was intended to probe for information on specific characters, settings, and events, other instruments such as free recall or restricting recognition tasks may have produced different results. Similarly, different questions or methods (e.g., not using numerical scales) on the affective measure may have elicited different answers.

Overall, the results of the probed recall support the role of imagery in developing meaning in a literary text. Although both groups generated a similar number of text explicit ideas, the imagery group produced a far greater number of text implicit ideas. This indicates that students who were encouraged to image as they read were better able to use specific text information for their own elaborations. That is, the students who received traditional instruction generally repeated text information, such as "Willie was a fieldmouse who fell in a rain barrel." The imagery students, on the other hand, elaborated upon the text, including "Willie was a fieldmouse who was young and careless and as a result fell in a cold, dark rain barrel." For the most part, these elaborations were generally similar across the imagery students, reflecting their own and shared group responses.

Further, although student responses to the question on the author's intent in writing the story included similar comments, the percentages by group indicated interesting differences by group. Nearly 70% of the imagery group, but only 50% of the traditional group, produced an interpretation of the text (i.e., be careful; help animals). In contrast, 50% of the traditional group, but only 33% of the imagery group, gave a reiteration of the text material (i.e., tell a good story). These findings may reflect the imagery group's processing beyond a literal text level, whereas the traditional group's processing was more text specific.

In contrast to the probed recall findings, the results of the affective measure were inconclusive. Given the means of the numerical ratings and the accompanying explanations, students in both groups generally seemed to like the story and the lessons. Given students' comments, it may be that both the short story and the three-part lesson (i.e., pre-, during-, and post-reading activities) were sufficiently different from their normal class routine. That is, the story was discussed as actual literature, including a description of the author and his experiences with country animals, as opposed to a decontextualized basal passage. In addition, students in both groups particularly noted the opportunity for group work and discussion, perhaps a learning component not usually included in their daily instruction.

However, several students in the imagery group did comment positively on being encouraged to visualize or "make pictures in your mind" individually during reading and with a group during discussion. Such comments suggest that these students found imagery to be of value during the lesson. It may be that other students also saw imagery as a worthwhile activity but subsumed this perception under general comments such as "fun" and "interesting."

The findings in this study suggest that the use of imagery may enhance students' ability to develop meaning beyond the explicit level of a literary text. Given the need to attend to different levels of comprehension (e.g., literal, interpretive, critical), teachers may consider imagery as a viable means of encouraging students' higher order thinking. Future research could address the use of imagery with other levels of students and types of text, such as upper elementary and secondary students learning from expository text. In addition, student responses following imagery use could be examined in other ways to more fully explore the transaction between a text, an individual reader, and a shared group discussion.

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A QUALITATIVE ANALYSIS OF CHANGES IN STUDENTS' THINKING: TEXT VERSUS DEMONSTRATION

Jeanne Swafford
Texas Tech University

Traditionally students' experiences have been regarded as positive influences on learning. However, within the last 15 years researchers have found that sometimes students' existing knowledge interferes with learning. Reading educators (e.g., Hynd & Alvermann, 1986; Guzzetti & Taylor, 1988; Maria, 1987) have found that students rarely disregard their real world experiences (or naive theories) when faced with information in a science text that is incompatible with those experiences or theories. Various approaches to promote conceptual change have been studied; for example, refutational text, prior knowledge activation, and augmented activation have been considered. Science educators (e.g., Champagne, Gunstone, & Klopfer, 1985; Hills, 1983) have also found that students' naive theories are resistant to change. They have typically used different approaches than reading educators for promoting conceptual change. Science educators often present scientific theories through problems, diagrams, models, demonstrations, and lab activities. In spite of the growing body of research, the results have been inconclusive about which instructional approaches promote conceptual change.

As a rule, conceptual change learning has been measured by differences in objective, pre/post product measures or application problems that are generally evaluated as correct or incorrect. My informal observation of individual student interviews during a study of conceptual change led me to suspect that changes may occur that can not be detected by objective measures. It is probable that quantitative procedures for data collection and analysis may have contributed to the inconclusive results about which instructional approaches promote conceptual change. Perhaps change has been conceived too narrowly. If conceptual change learning is achieved through a series of "successive approximations" as suggested by Fisher and Lipson (1986), it makes sense that data collection and analysis procedures should reflect this idea. The data collection and analysis procedures used in this paper address the limitations of studies that use quantitative procedures to measure conceptual change.

The purpose of this paper was to trace the changes in students' thinking about the physical science concept of free fall while counterintuitive information was presented in two ways: a demonstration and a text plus demonstration. An application problem was used as a posttest measure. Answers were analyzed for the degree of correctness and for the specific content included in the answers.

METHOD

The data discussed in this paper were drawn from a larger study (Swafford, 1989) that investigated the conditions that promote conceptual change about free fall. Gender differences were also examined. The effects of a text, demonstration, text plus demonstration, and demonstration plus text were examined. Individual structured interviews were used in the treatments that included a demonstration. Each interview was audiotaped. Subjects for the study included 83 9th-, 10th-, and 11th-grade students enrolled in biology, anatomy and physiology, and chemistry classes in a public high school in the southeastern United States. All students demonstrated misconceptions about free fall on a pretest. Effectiveness of the treatments was measured by an immediate and delayed multiple choice test and an application problem. An analysis of covariance on the multiple choice test scores revealed that students performed the same on the multiple choice posttest regardless of the treatment they received. Analysis of the qualitative data from the application problem suggested that a combination of a text and demonstration provided students with information that was more likely to initiate conceptual change than a text or demonstration alone. In this paper, the data collected from the structured interviews mentioned above were examined to explore the broader dimensions of conceptual change that may not have been accessible from the quantitative data collection and analysis procedures used in the larger study.

Subjects

Subjects in this dimension of the study included 41 of the students who were included in the study described above. Only those students who received the Demonstration Treatment or the Text Plus Demonstration Treatment were included because I wanted to examine the similarities and differences in students' thinking when information was presented in a demonstration only and when a text was provided before the demonstration.

Data Collection

The data were collected in individual structured interviews during the Demonstration Treatment and Text Plus Demonstration Treatment. Each interview was audio recorded. The Demonstration Treatment involved a prediction-demonstration/observation-explanation instructional sequence similar to that which has been used in previous studies by science educators (e.g., Champagne et al., 1985; Gunstone & White, 1981). In the study reported here, student interviews were a part of the instructional sequence. More specifically, the interviews were conducted during the prediction and explanation phases of the instructional sequence. In the prediction phase, students were asked to predict which of two objects would hit the ground first when they were dropped at the same time, from the same height. Then they were asked to explain why they thought their predictions were correct and reported the source (e.g., science class, common sense, experience) of their information. In the demonstration/observation phase, students observed a demonstration that was conducted three times. The interviews continued in the explanation phase of the instructional sequence. Students were asked to report their observations and to explain why they thought the objects fell the way they did. Last, students were asked to compare their predictions with their observations so that misconceptions would be directly confronted.

A series of eight demonstration sequences were used in the Demonstration Treatment. After the fourth demonstration, students read a two-sentence prompt that mentioned gravity and air resistance as the explanation for free fall. The Text Plus Demonstration Treatment was identical to the Demonstration Treatment except that students read and studied a 471-word refutational text (Hurd, Silver, Bacher, & McLaughlin, 1988) that explained the scientific theory of free fall before they encountered the demonstrations. After the demonstrations were completed, students in each treatment answered an open-ended application problem that required them to apply what they had learned about the concept of free fall. The application problem stated that 2 blocks of the same size were dropped at the same time from the top of the Washington Monument. One block weighed 2 pounds and the other block weighed 4 pounds. Students were asked to describe in writing what would happen when the blocks were dropped, and to specifically identify which block would hit the ground first. Then they were asked to explain their answers.

Data Analysis

The tapes from the interviews were transcribed verbatim. Students' answers to the questions were collapsed into single words and/or phrases that reflected the substance of students' responses. Then a network matrix (Miles & Huberman, 1984) was constructed for each individual from the substantive words and phrases. The individual matrices were examined for patterns that emerged across the eight demonstrations. Each matrix provided a visual representation of the flow of each student's thinking and depicted the shifts that occurred during the demonstrations.

Next the information from the individual matrices were transferred to two charts, one for each treatment (see Table 1 for a sample chart). Subjects were grouped by gender on each chart. The charts were examined for common responses, trends, and/or shifts in students' thinking for each demonstration. Then comparisons were made between treatments and gender for each demonstration. To insure the reliability of the matrices and charts, three graduate students inspected a random sample of the matrices and charts. Interrater reliability was .98.

Table 1

Sample Chart: Demonstration 1, Text + Demonstration Treatment

Gender	Prediction	Explanation (before demo)	Source	What happened?	Explanation (after demo)
F	both	air resistance	book	both	air resistance & gravity =
F	both	mass & gravity	book	both	gravity
F	both	gravity	book	both	gravity
M	baseball	more weight	experiences	both	gravity
M	baseball	more weight	science	both	gravity
M	baseball	more weight	my thoughts	both	gravity

The qualitative data gathered from the subjects' answers to the application problem were described in terms of the categories that emerged from the problems. Answers were analyzed according to guidelines for qualitative analysis discussed by Bogdan and Biklen (1982) and Bogdan and Taylor (1984).

The answers to the application problem were graded according to predetermined criteria. Students not only had to answer that the two blocks would hit the ground at the same time, they also had to explain their answers. Answers were scored correct, partially correct, and incorrect. An answer was scored correct if students said that both blocks would hit the ground at the same time *and* if both the effects of gravity and air resistance were mentioned in the explanation. An answer was scored partially correct if students said both blocks hit the ground at the same time but the explanations were missing, inaccurate, or mentioned only gravity *or* air resistance. An answer was scored incorrect if students said that one of the blocks hit the ground before the other.

After students' responses were graded, the responses were divided into three categories: correct, partially correct, and incorrect. Then each student's response was written on a chart by treatments. Next, the partially correct and incorrect answers were examined for patterns of responses. To do that, the responses were read and categories were listed as they appeared in the data. Each category was assigned a particular color. Then the responses were read again, and each set of similar responses was highlighted in the specified color. Some of the patterns reflected students' naive theories (incorrect ideas) and other patterns reflected accurate ideas. Six distinct patterns of responses emerged from the subjects' partially correct and incorrect answers. Two patterns reflected errors and four patterns reflected accurate ideas. The coded data were also inspected for patterns that reflected similarities and differences according to gender.

Four questions were examined as the qualitative data from the interviews and application problems were analyzed: (a) Do students use information from a text to guide their observations during a demonstration? (b) What qualitative differences appear in the data that may be attributed to the nature of the treatment? (c) Are there treatment differences according to gender? (d) How do students' answers to the application problem differ according to treatment conditions?

RESULTS

Examination of the treatment charts revealed that girls in the Text Plus Demonstration Treatment made more accurate predictions about the outcome of seven out of eight demonstrations than girls in the Demonstration Treatment. Moreover, in six out of eight demonstrations, girls in the Text Plus Demonstration Treatment also observed more accurately than girls in the Demonstration Treatment. Examination of the charts also revealed that five out of eight times, boys in the Text Plus Demonstration Treatment made more accurate predictions than boys in the Demonstration Treatment. Boys in the Text Plus Demonstration group observed more accurately than the other group in only one instance, however. These results suggest that girls benefited more from reading a text before a demonstration than boys. Evidently, girls relied more heavily on the information from the text to guide their predictions and observations than boys did.

Students' explanations of free fall during the prediction phase of the instructional sequence included comments about gravity, air resistance, size, and weight. Although most of the explanations given by boys and girls were similar, one response was unique to girls. Some girls explained that objects would hit the ground at the same time because they were dropped from the same height, at the same time. This explanation was most prevalent among girls in the Demonstration Treatment, especially before the fourth demonstration, when a written prompt was given that explained that gravity and air resistance accounted for free fall. These data suggest that girls in the Demonstration Treatment lacked the information that was necessary to explain the phenomenon of free fall, and they used only a simplistic explanation until new information was encountered in the prompt.

After the demonstration/observation phase of the instructional sequence, students' explanations of free fall began to change. Although some students continued to explain free fall in terms of weight, that explanation appeared less often after the demonstration/observation phase than in the prediction phase. Gravity was mentioned more often in students' explanations after the demonstrations than in their predictions. Boys and girls continued to mention size as an explanation for free fall at about the same rate in both the prediction and explanation phases of the instructional sequence.

Gender differences related to the concept of air resistance were observed during the last demonstration depending on the treatment. In both treatments, boys mentioned air resistance correctly more often in the explanation phase (i.e., after the demonstrations) than in the prediction phase (i.e., before the demonstrations). Likewise, girls in the Demonstration Treatment mentioned air resistance correctly more often in the explanation phase than in the prediction phase, but only half as often as the boys did. However, in the Text Plus Demonstration Treatment, girls' responses about air resistance were similar in the prediction and explanation phases of the instructional sequence. Girls in the Text Plus Demonstration Treatment mentioned air resistance in the prediction phase more often than the girls in the Demonstration Treatment. In the explanation phase, however, the girls in the Demonstration Treatment mentioned air resistance slightly more often than the girls in the Text Plus Demonstration Treatment.

Both boys and girls had some difficulties understanding the effects of air resistance on falling objects. Sometimes they talked about air inside the objects rather than air resistance on the objects. Nevertheless, there was evidence in the explanation phase of the last demonstration that 71% of the boys in both treatments appeared to understand the concept of air resistance. In contrast, only about 47% of the girls in the Demonstration Treatment and 42% of the girls in the Text Plus Demonstration Treatment exhibited an understanding of air resistance as it related to free fall.

The categories of responses in the answers to the application problem were compared to identify qualitative differences in students' thinking. In both treatments, more students used some aspect of the scientific theory (i.e., gravity and/or air resistance) to solve the problem than they did on the pretest. Not surprisingly, the most frequent answer in both treatments was related to the effects of gravity. Although most of the students included some aspect of the scientific theory in their responses, six students completely rejected the scientific theory of free fall. Those students maintained the naive theory that weight determines how quickly objects fall. All six students were in the Demonstration Treatment. None of the students who read the text maintained their naive theories about how weight affects falling objects.

There were other qualitative differences by treatment in students' answers to the application problem. Students in the Text Plus Demonstration Treatment explained free fall in terms of gravity, air resistance, size, acceleration rate, mass, and terminal velocity, whereas students in the Demonstration Treatment explained free fall in terms of gravity, air resistance, and size. These qualitative differences were expected. The text provided students with more language that could be used to describe the concept of free fall than the Demonstration Treatment. The only information provided for students in the Demonstration Treatment was a two-sentence prompt that mentioned the effects of gravity and air resistance on falling objects. It should be noted, however, that when students used terminology such as *acceleration*, they did not always use it accurately.

DISCUSSION

The results of this study suggest that examination of interview data and answers to open-ended problems may more accurately reflect the actual changes in students' thinking during and after an intervention than objective tests. With this in mind, it is important that researchers consider other measures, besides objective posttests, to investigate the effectiveness of instructional approaches for promoting conceptual change. The instructional approaches may, in fact, facilitate change but the posttests simply may not be sensitive to the types of changes that actually occur. If researchers are interested in the changes that do occur, interviews and discussions should be considered as sources of data that will more probably reflect changes in students' thinking than an objective posttest. Perhaps looking at the different kinds and degrees of change that occur, depending on the instructional approach, may provide further insights into ways to promote conceptual change.

Contrary to the quantitative data that were collected in the larger study (Swafford, 1989), the qualitative data from this study suggest that it is important to include information from a text along with a demonstration when teaching counterintuitive science concepts, especially for girls. Neither study provides an explanation for why conflicting results between the qualitative and quantitative data were found. I can only speculate that the nature of the tasks students were asked to do may have accounted for the differences. Objective tests require students to merely recognize the scientific theory rather than generate an explanation of the theory. Students appeared to be able to recognize theory regardless of the type of treatment they received. The differences were only noted when students had to generate their own explanations (in the interviews and on the application problem). It appears that girls were as likely to recognize the scientific explanation for free fall as boys but they were unable to generate scientifically accurate explanations as successfully as boys.

The finding that girls tended to learn counterintuitive science concepts better when information was presented in a text and a demonstration is puzzling. However, other researchers (e.g., Eylon & Linn, 1988; Kahle, 1984) have postulated that girls may not have had the same kinds of informal science-type experiences as boys and, consequently, have more difficulty focusing on appropriate features of science demonstrations than boys. It is possible that the formal information from the text helped girls attend to appropriate aspects of the demonstration and, consequently, contributed to their understanding of free fall. Further research needs to be done to investigate the nature of gender differences when counterintuitive science concepts are taught.

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BRIDGING ACROSS INSTANCES OF A CONCEPT IN SCIENCE INSTRUCTION

C. Stephen White, David A. Hayes, and P. Elizabeth Pate
University of Georgia

The purpose of this study was to investigate the extent to which learning is assisted by the establishment of a conceptual model and the application of bridging strategies to connect instances of the conceptual model. A *conceptual model* is a set of statements or spatial representations that explain and connect the major parts, states, and actions of the material to be learned. It provides a structural representation of the concept so that students can follow a corresponding pattern in building their own mental models. *Bridging strategies* are instructional ploys used to bridge or connect different aspects of material presented. They serve to clarify correspondences between features of conceptual models and features of phenomena taught. A substantial body of research (Curtis & Reigeluth, 1984; deKleer & Brown, 1981, 1983; Gentner, 1983; Royer & Cable, 1976) has demonstrated the pivotal role that conceptual models play in enabling students to build upon what they learn and to transfer it. Mayer (1989) contends that when students are given models they are more likely to understand the systems they are studying and subsequently use these models to generate creative solutions to transfer problems. In a recent review of studies which employed conceptual models for scientific materials, Mayer (1989) cites consistent support for the idea that conceptual models can lead to changes in the ways that students think about subject matter. For example, in separate experiments Mayer (1983) presented conceptual models to initiate lectures on radar and on Ohm's law with high school physics students. Prior to teaching how radar works, students were presented a model which used a set of concrete diagrams to represent the five major steps in radar processing: transmission, reflection, reception, measurement, and conversion. When teaching Ohm's law Mayer gave students a model which consisted of four labeled diagrams that emphasized the major elements and states in electrical flow (Mayer, 1983). Additional investigations by Mayer and others have demonstrated the effectiveness of using conceptual models prior to formal instruction on specific topics (e.g., Mayer, 1989).

When the teacher provides explicit bridges or connections between concepts during instruction, learners realize they can rely on their knowledge of the structural features of material they have previously learned (Prawat, 1989). There are several strategies that a teacher can use to enhance the explicit connection of students' concepts. These strategies have been shown to be effective ways to provide bridges between concepts. Central to all bridging strategies is the use of key ideas for giving structure to the material to be learned. When teaching unfamiliar subject matter the teacher communicates to students that some ideas are more meaningful than others, that is, they allow for a richer set of connections.

The teacher has numerous options for building bridges across subject matter. For example, students can be engaged in direct verbal exchange (Alvermann & Hayes, 1989) and the teacher can have students reflect on subject matter in various writing and self-questioning activities (Copeland, 1984; Hayes, 1987; Hayes, 1989a). Students can also be asked to read and complete a study guide that has them compare the material they read with other knowledge they may have (Bean, Singer, & Cowan, 1985; Hayes, 1989a). The teacher may use charts, diagrams, and pictures to explicate these key ideas (Hayes & Henk, 1986; Hayes & Readence, 1983; Reinking, Hayes, & McEneany, 1988; Stewart, VanKirk, & Rowell, 1979; Vaughan, 1982). Examples and nonexamples of key ideas are explained. The teacher can use concept mapping to make explicit the ways in which different concepts are related and why certain linkages are more valid or less valid than others. Concept maps can also help identify concepts that may be missing or incorrectly linked in a student's conceptual framework (Alvermann & Hynd, 1989). The teacher can use concrete materials to build connections between objects and events in the real world and their symbolic representations (Hiebert, 1984; White & Alexander, 1986). Concrete representations can crystallize or give form to concepts and procedures (Mason, 1987).

All bridging strategies are essentially analogical in nature. The role of comparison via analogies is widely recognized as an effective instructional tool for improving understanding of unfamiliar information (Alexander, Pate, Kulikowich, Farrell, & Wright, 1989; Alexander, White, Haensly, & Crimmins-Jeanes, 1987; Hayes & Tierney, 1982; Hayes, 1989b; Hayes & Henk, 1986; White, 1989). Analogy has students compare conceptual experiences on the basis of shared attributes. It is the essential cognitive maneuver by which students transfer information from a known domain to a new one (Alexander, Kulikowich, & Pate, 1989; Pate, 1989; Pate, Alexander, & Kulikowich, 1989; White & Caropreso, 1989). For example, when comparing electricity to traffic or water flow students may understand that although electricity and water are dissimilar, they have in common the fact that both move in a fluid sort of way (Hayes & Mateja, 1981).

This study examined what middle-grade students make of a teacher's presentation of science material. How do they come to understand the material, and how do they use what they come to understand in order further to understand and learn related material? With respect to the first side of the question, we assessed the efficacy of initiating instruction by presenting students a model of the general concept for understanding subsequent presentations. With respect to the other side of the question, we assessed the efficacy of providing students explicit linkages between material previously presented and newly introduced subject matter.

METHOD

Participants

The participants for this study were one teacher and 127 sixth-grade students of an intermediate school in northeast Georgia. These students were placed in five heterogeneously grouped classes of average achievement. The participants came from predominantly white, working-class families.

Materials

The unit that was taught focused specifically on *biomes*, a large geographic area where the community of plants and animals is determined by climate and soil (Zeitler & Barufaldi, 1988). Desert, tundra, grasslands, and forest were the four biomes introduced in the lessons. The instructional materials employed in this study included instructional scripts, visual aids, concrete materials, reading materials, study guides, and tests. Instructional scripts provided background information for the teachers on biomes and each biome in particular. Each instructional script specified bridging components that were coordinated with visual aids such as overhead transparencies, graphs, models, and wordcards. The scripts covered 10 days of instruction and followed a direct instruction mode. For each biome, students were provided a packet of four to five pages of reading materials written at the sixth-grade level. Students also completed study guides containing matching items, fill-in-the-blank exercises, and chart completion tasks. The study guides also highlighted key ideas of individual biomes as well as other biomes already studied. Concrete objects were also used to enhance students' understanding of key features of each biome. For example, students viewed and touched lichens and mosses, common flora of the tundra biome.

Assessment Procedures

Testing and instruction were administered by the classroom teacher during the regularly scheduled science classes. Student knowledge of biomes was tested before and after instruction using a test of alternate forms. The pretest consisted of 25 multiple-choice questions on the four biomes studied. To provide an assessment of student learning in the project, these items had corresponding, alternately formulated items on the posttest. The test items dealt with salient features for each biome: location, climate, flora, and fauna. These items provided for measuring transfer by applying key ideas of the four biomes studied to a fifth biome not studied. Items on the posttest assessed the transfer value of the instruction by asking about conceptual knowledge of the biomes (i.e., interrelatedness of their key ideas such as food chain) that could be applied to a fifth biome, the marine biome, which was not specifically taught.

Instruction. The first day of instruction was devoted to introducing the general concept of biomes. Students were informed about the importance of biomes, such as, "learning about biomes enables one to be better able to make decisions about science-related issues that affect the survival of our society." Next, all students were given an overview of ecology and the role of biomes in ecology. Students were introduced to the four biomes that were examined during the 10 days of instruction. A multiple-choice test was given on the first day to determine if the students acquired the initial conceptual model.

Each of the four biomes was taught for 2 instructional days. On the first day, the teacher presented information for each biome related to location, climate, flora, and fauna. Science process skills such as observing, predicting, and inferring were incorporated into hands-on activities for each biome. The second day of instruction was devoted to review and hands-on activities.

The concept of biome was introduced with a conceptual model that showed the interrelatedness of its key ideas; these key ideas provided categories for placing information about specific biomes and served as bridging devices for advancing students' knowledge from one specific biome to another. Climate, location, flora, and fauna were the key ideas of all biomes. These key ideas were elaborated in appropriate detail as they applied to the specific biomes (desert, tundra, grasslands, forests). Concrete and representational pictures of examples and nonexamples were used to clarify the interrelatedness of the key ideas within each biome (e.g., fauna: whereas the jackrabbit is adapted to desert life, the field rabbit is not). The key ideas were also bridged across the specific biomes. Charts, study guides, and concrete representations comparing and contrasting the four biomes were presented to allow students to connect new subject matter to the established pattern of knowledge. Analogies were also used throughout instruction to allow students to compare shared attributes from a known concept to a new one. For example, ringtails and jackrabbits from the desert biome have large ears which help get rid of excess body heat, whereas flying squirrels and flying frogs from the forest biome have adapted their bodies to allow them to glide from tree to tree.

RESULTS AND DISCUSSION

The results of the study are limited by the basic approach described. Specifically, the instruction was investigated without comparing it to other instructional approaches. However, the results do appear to support the use of conceptual model and bridging techniques in teaching. Dependent t tests comparing students' final test performance with their pretest performance indicated a positive outcome in each of three areas assessed: conceptual knowledge of biomes ($t[116]=6.49$, $p<.001$), specific knowledge of the particular biomes taught ($t[116]=6.22$, $p<.001$), and ability to transfer learning to answer questions about a biome that had not been taught ($t[116]=4.23$, $p<.001$). Table 1 displays the means and standard deviations of students' test performance on items in each of these areas before and after instruction.

By presenting students an initial conceptual model the teacher succeeded in providing an abstract framework that was later useful for explaining general ideas underlying the phenomena of several biomes. Presenting in turn a conceptual model for each of the four biomes taught, the teacher provided a framework for learning and

Table 1

Means (and Standard Deviations) for Pretest and Posttest Performance on the Concept Biome

	Conceptual Model	Bridging	General	Total
Pre	2.75 (1.66)	2.31 (1.23)	6.47 (2.20)	11.57 (3.76)
Post	4.0 (2.03)	2.82 (1.23)	7.88 (2.39)	14.70 (4.61)

understanding the interrelatedness of specific facts about the biome. Texts, written exercises, and verbal presentations that explicitly compared the key features of the biomes taught successfully bridged the conceptual correspondences between these biomes. Students' test performance indicated an improved understanding of the interrelatedness of abstract features of the concept biome. Concomitantly, their knowledge of the specific biomes taught was increased. Perhaps most important, instruction with the combined use of conceptual models and bridging techniques enabled students to transfer conceptual knowledge about biomes in general to answer questions about a biome they had not previously studied.

Combining conceptual models with bridging strategies may have been effective because it provided and reinforced organizational structures that facilitated students' access to knowledge that they needed for learning applied material at a later time. Throughout instruction, the teacher was able to make clear comparisons and contrasts between biomes. This allowed students not only to observe likenesses and differences across the biomes, but to make critical differentiations in the biomes' key features. By bridging newly presented subject matter to an established pattern of knowledge, students were shown how to build internal connections among pieces of information. In this study the teacher was able to provide students with organized knowledge by presenting conceptual models and showing students systematic ways of dealing with science texts by using bridging techniques. This instruction transferred to a conceptually parallel topic which had not been previously taught. Future research needs to examine further the extent to which students induce complex concepts from instruction and make specific applications of subject matter by making comparisons between students who do and do not receive instruction with conceptual models and bridging techniques.

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AN ANALYSIS OF THE ARRAY OF LITERARY WORKS IN DISTRICT CORE READING LISTS, GRADES K–6

James Flood and Diane Lapp
San Diego State University

Greta Nagel
San Diego State University & Claremont Graduate School

The purpose of this study was to investigate the array of literary works included in core reading lists for California public school students in order to determine the breadth of the choices.

In 1987, with the publication of the *English Language Arts Model Curriculum Guide: Kindergarten through Grade Eight*, the California State Department of Education strongly urged public school districts to design core reading lists for all students in kindergarten through Grade 8. The document stated that children were expected to receive direct instruction in significant core works of literature which would provide a common literary experience. The works were to show "that some problems in life, and the solutions to them are shaped by a culture or by individual experience" (California State Department of Education, 1987b).

The State Department of Education also chose to provide suggestions for appropriate literature selections. However, there is no prescriptive state list. Instead, core lists were to be developed by curriculum planners within individual school districts—with the caution that they "must be careful to include materials from varied cultures" (California State Department of Education, 1986). For over a decade, the philosophy expressed within state publications has pointed to the critical role that can be played by works of literature in "bridging the gap" that separates human beings of different cultures and different values (California State Department of Education, 1980). In 1986, the California State Department of Education published *Recommended Readings in Literature: Kindergarten Through Grade Eight* in which literary pieces from many different cultures and many different forms of writing were represented.

An important distinction made in the state guidelines was that school districts should provide teachers and students with three types of lists: Core, Extended, and Recreational/Motivational. The Core list would be required for all students except those students whose ability in English would prohibit them access to understanding. The Extended list would provide selections that might be made for assignments to specific groups of readers or to individual students. The Recreational/Motivational list would provide titles to be selected for leisure reading (voluntary reading, selected reading, reading for enjoyment).

The focus of this study was on core works, the books that all students read or listened to when their teachers read them aloud. Specifically, the study examined the core lists to determine: (a) the inclusion of "quality" (acclaimed) literature, (b) the inclusion of a variety of writing types (genres), and (c) the inclusion of works representing diverse cultures and values.

METHOD

Letters to 24 California school districts were mailed, requesting the list of core works that had been selected for students to read in Grades K–6. The districts represented a spectrum of size, location, and socioeconomic status. The respondents included 9 urban districts (3 north, 3 central, and 3 south); 9 suburban districts (3 north, 3 central, and 3 south); and 6 rural districts (2 north, 2 central, and 2 south).

All lists were entered into a computer program as data by grade level, then alphabetized and analyzed as to repetitions of titles. Lists were further analyzed as to repetitions of authors and titles within and across grade levels.

RESULTS

The lists from surveyed districts varied in length and content. One list had as few as 2 selections for third grade, another had 26 entries. The vast majority of titles were narrative fiction pieces. In spite of state modeling, only five districts made an effort to name core works across all other genres. Whereas 100% of the responding districts listed works of narrative fiction, only 27% listed poetry, 41% had folklore, 5% had plays, 14% had Spanish language works, and 23% had nonfiction.

Some books, like *Charlotte's Webb* (White, 1952), were mentioned many times at many levels. Some books, like *The Very Hungry Caterpillar* (Carle, 1981), were selected many times, but only at one level. Many other titles, even classics such as *Heidi* (Spyri, 1945), were mentioned only once.

The majority of the books selected by districts appear in the State Department's 1986 *Recommended Readings in Literature* list. Most of these titles are works whose authors and illustrators have been recipients of such awards as the Newbery, the Caldecott, and the Young Reader medals. They have been frequently cited in readily available annotated lists. Although some "classics" appear, there are many "modern classics" that do not appear among these titles.

The top 25 titles included among the school districts surveyed are included in Table 1. Tables 2 and 3 present the 25 top titles for the primary grades (K–3) and the top 10 titles for the intermediate grades (4–6) in which fewer, longer core books are designated than in the primary grades.

Proportions of multicultural selections were comparatively high at some levels, because books with popular themes for social studies integration, like *Island of the Blue Dolphins* (O'Dell, 1960) and *Sign of the Beaver* (Speare, 1983), were popular choices. The proportions of multicultural works at kindergarten and first grade were quite low, partly because the possibilities for popular multicultural books at these

Table 1

State of California Top Twenty-Five District Core Works, K–6

Title	Level	# of Districts Selecting	% Districts Selecting
1. *Stone Soup* (Brown, 1947)	Primary	20	83
2. *Charlotte's Web* (White, 1952)	Upper	18	75
3. *Mother Goose* (DePaola, 1985; Various authors)	Primary	17	71
4. *Alexander & the Terrible, Horrible, No Good, Very Bad Day* (Viorst, 1972)	Primary	16	66
5. *Island of the Blue Dolphins* (O'Dell, 1960)	Upper	15	63
6. *The Little Red Hen* (Galdone, 1973)	Primary	15	63
7. *Sign of the Beaver* (Speare, 1983)	Upper	15	63
8. *Sylvester and the Magic Pebble* (Steig, 1969)	Primary	15	63
9. *The Velveteen Rabbit* (Williams, 1958)	Primary	15	63
10. *Where the Wild Things Are* (Sendak, 1963)	Primary	15	63
11. *Sarah, Plain and Tall* (MacLachlan, 1985)	Upper	15	63
12. *James and the Giant Peach* (Dahl, 1961)	Upper	14	58
13. *Brown Bear, Brown Bear, What Do You See?* (Martin, 1983)	Primary	12	50
14. *Corduroy* (Freeman, 1968)	Primary	12	50
15. *The Very Hungry Caterpillar* (Carle, 1981)	Primary	12	50
16. *Caps for Sale* (Slobodkina, 1947)	Primary	11	46
17. *The Lion, the Witch, and the Wardrobe* (Lewis, 1950)	Upper	11	46
18. *The Three Bears* (Galdone, 1973)	Primary	11	46
19. *The Three Billy Goats Gruff* (Blair, 1974)	Primary	11	46
20. *The Bremen Town Musicians* (Grimm, 1980)	Primary	10	42
21. *By the Great Horn Spoon* (Fleischman, 1963)	Upper	10	42
22. *Frog and Toad Are Friends* (Lobel, 1970)	Primary	10	42
23. *Ira Sleeps Over* (Waber, 1972)	Primary	10	42
24. *Ramona and Her Father* (Cleary, 1977)	Primary	10	42
25. *Where the Red Fern Grows* (Rawls, 1961)	Upper	9	38

Note. Total number of districts = 24

grade levels are somewhat limited. Animals serve as heroes and heroines in many primary picture books. Nevertheless, the lists and the proportions indicate that there are not many opportunities for students to have contact with a variety of cultures through the core literature lists.

Table 4 shows the actual numbers of books selected at various grade levels, by ethnicity, for all subject school districts. The groups are indicated by the same system used by the California State Department of Education documents: African-American, Hispanic, American Indian, Japanese, Chinese, and Vietnamese. Only 11% of all titles were written by or about people of these cultures. Most children going through a core literature program in most school districts would come across little or no multicultural literature during an entire school career.

Table 2

State of California Top Twenty-Five District Core Works, K–3

Title	# of Districts Selecting	% of Districts Selecting
1. *Stone Soup* (Brown, 1947)	20	83
2. *Mother Goose* (Various authors)	17	71
3. *Alexander & the Terrible, Horrible, No Good, Very Bad Day* (Viorst, 1972)	16	66
4. *The Little Red Hen* (Galdone, 1973)	15	63
5. *Sylvester and the Magic Pebble* (Steig, 1969)	15	63
6. *The Velveteen Rabbit* (Williams, 1958)	15	63
7. *Where the Wild Things Are* (Sendak, 1963)	15	63
8. *Brown Bear, Brown Bear, What Do You See?* (Martin, 1983)	12	50
9. *Corduroy* (Freeman, 1968)	12	50
10. *The Very Hungry Caterpillar* (Carle, 1981)	12	50
11. *Caps for Sale* (Slobodkina, 1947)	11	46
12. *The Three Bears* (Galdone, 1973)	11	46
13. *The Three Billy Goats Gruff* (Blair, 1974)	11	46
14. *The Bremen Town Musicians* (Grimm, 1980)	10	42
15. *Frog and Toad Are Friends* (Lobel, 1970)	10	42
16. *Ira Sleeps Over* (Waber, 1972)	10	42
17. *Ramona and Her Father* (Cleary, 1977)	10	42
18. *The Ugly Duckling* (Andersen, H. C., 1979)	7	29
19. *Little Red Riding Hood* (Hyman, T. S., 1983)	7	29
20. *The Tale of Peter Rabbit* (Potter, B., 1902)	7	29
21. *Annie and the Old One* (Miles, M., 1971)	5	21
22. *Miss Rumphius* (Cooney, 1982)	5	21
23. *The Little House* (Burton, 1942)	5	21
24. *Johnny Appleseed* (Kellogg, 1976)	5	21
25. *Hansel and Gretel* (Grimm & Grimm, 1982)	5	21

DISCUSSION

In analyzing the titles selected by the 24 surveyed districts, three major conclusions can be drawn: (a) the lists reflect extremely familiar titles that are highly acclaimed pieces of literature, (b) the selections are almost exclusively narrative fiction, and (c) the titles do not represent a variety of cultures.

Familiar, Highly Acclaimed Titles

In large part, the selections on these lists would satisfy even the most rigid criteria for "quality" literature; they have received a variety of awards and honors. The titles range from the familiar *Charlotte's Web* (White, 1952) to more recent titles like *Miss Rumphius* (Cooney, 1982).

Table 3

State of California Top Ten District Core Works, 4–6

Title	# of Districts Selecting	% Districts Selecting
1. *Charlotte's Web* (White, 1952)	18	75
2. *Island of the Blue Dolphins* (O'Dell, 1960)	15	63
3. *Sign of the Beaver* (Speare, 1983)	15	63
4. *Sarah, Plain and Tall* (MacLachlan, 1985)	15	63
5. *James and the Giant Peach* (Dahl, 1961)	14	58
6. *The Lion, the Witch, and the Wardrobe* (Lewis, 1950)	11	46
7. *By the Great Horn Spoon* (Fleischman, 1963)	10	42
8. *Where the Red Fern Grows* (Rawls, 1961)	9	38
9. *Indian in the Cupboard* (Banks, 1981)	8	33
10. *A Wrinkle in Time* (L'Engle, 1962)	8	33

Variation in Types of Writing (Genres)

More than 90% of the titles on the lists were narrative fiction pieces. Children were rarely exposed through these lists to information texts. This is potentially problematic because the conclusion reached by many reading educators is that children need to read a wide variety of writing types to become competent, strategic readers. Many researchers have determined that ongoing exposure to different kinds of writing is related to overall reading success (Anderson, Hiebert, Scott, & Wilkinson, 1985; Flood & Lapp, 1986). It has been found to be important to maintain repetitive and extensive exposure to nonnarrative, as well as narrative, texts if wide ranges of literacy are to be developed (Pappas, 1990).

Table 4

Number of Selected Core Books by Ethnicity

Grade	African-American	Hispanic	American Indian	Japanese	Chinese	Vietnamese
K	4	1	3	2	2	1
1	5	2	2	3	3	0
2	9	1	3	4	4	1
3	9	2	4	2	3	1
4	14	2	7	3	2	1
5	14	2	8	2	2	1
6	5	0	3	2	1	1
Total	60	10	30	18	17	6

Note. From a possible 1,241 titles submitted by the 24 school districts.

Multicultural Titles

This study has raised several questions about children's exposure to a variety of cultures through literature. A major question is: Are the selected books serving the goal of "bridging the gap" as outlined in the state English-Language Arts Framework for California Public Schools (1987a)? For example, what is happening for the largest ethnically diverse group in the school districts responding to this survey? Hispanic students form a large, growing part of our elementary classrooms in California and elsewhere, and these students face staggering high school dropout rates. The sense of school as a place to be, a "place where I belong," has proven to be a critical factor in successful dropout interventions. The power of literature—permitting identification and empathy with special characters who have values and struggles unique to their own situations—is a key element within the movement toward literature-based instruction. Yet few titles by or about Hispanics are included among the works on the core lists.

A related question is, of course, the *availability* of books that can share a variety of cultures. Although the state *Recommended Readings in Literature* (1986) does include titles that relate to Hispanic culture, there are not very many titles. There are three picture books, one book of folklore, one book of modern fantasy and science fiction, one book of poetry, five books of contemporary realistic fiction (appropriate for Grades 2–5), one book of historical fiction, three books of nonfiction plus four biographies. The list of suggested possibilities is not particularly large at 19 volumes. It is, nevertheless, a great deal larger than the number of various Hispanic titles (eight) actually selected within school districts and seldom duplicated from one district to another. The same scenario can be repeated for children from each of the other cultures emphasized in the state documents.

Although school districts have made great strides in developing their core reading lists, care and attention need to be given to future lists to ensure the inclusion of a wide variety of classics as well as contemporary works, a variety of genres, and a variety of works representing a variety of cultures.

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PROMOTING CRITICAL THINKING THROUGH RESPONSE LOGS: A READER-RESPONSE APPROACH WITH FOURTH GRADERS

Patricia R. Kelly
California State University, San Bernardino

Nancy Farnan
San Diego State University

Current understandings about comprehension have shifted our focus from the notion of meaning being contained in the text itself to meaning being constructed by the reader. Rosenblatt (1978, 1983, 1985) is credited with first turning attention toward a transactional view of reading, a perspective in which meaning emerges through a *transaction* between reader and text in a particular context, and idiosyncratic responses by individuals are recognized. According to Beach and Hynds (1991), readers' responses are both individual and multifaceted. "Researchers in literary response have tended to conceptualize each reader as 'a universe of one,' thus challenging the notion of the normative response to literary texts" (Beach & Hynds, 1991, p. 453). In other words, this perspective challenges the idea that there is one correct response to a literary piece. Additional support for a reader-response approach has been evident in both theory and research (Beach & Hynds, 1991; Chase & Hynd, 1987; Probst, 1988b).

For educators, one value of this approach lies in the vehicle it provides us to guide students beyond literal recall of information about literature, and to foster their engagement in critical and higher order thinking. This is especially crucial in light of the recent evidence from the National Assessment of Educational Progress reported in Mullis and Jenkins (1990), which indicates that few students perform reading or writing tasks that go beyond the relatively simplistic, and little analysis or evaluation of text occurs.

Impetus from current notions about reading and from reader-response theory has resulted in a shift in classroom practice, a shift which recognizes the importance of the interaction between reader and text, and focuses on the construction of meaning in literature. These practices include the use of literature study groups, in which readers construct meaning in a social context (Eeds & Wells, 1989), and student-centered, rather than teacher-centered, response-based instruction (Nelms, 1988; Probst, 1988a; Purves, Rogers, & Soter, 1990). Reader-response assumptions such as the following increasingly are guiding instruction (Chase & Hynd, 1987, p. 531):

a. Meaning is not "contained" in the text, but is derived from an interaction between the content and structure of the author's message and the experience and prior knowledge of the reader.
b. Readers comprehend differently because every reader is culturally and individually unique.
c. Examining readers' responses to text is more valid than establishing one "correct" interpretation of text meaning.

In an attempt to broaden our understandings about readers' responses to text, a variety of category systems have emerged. In Beach and Hynds' (1991) review of research on response to literature, they documented 21 category systems for examining readers' responses. Among these were category systems which utilized levels of interpretation (Marshall, 1987), examined a reader's focus on specific aspects of texts (Nissel, 1987), looked at readers' stances (Langer, 1989), and used Piagetian categories of cognitive development (Applebee, 1978). Beach and Hynds did not favor one category system over another; they indicated that:

> while most researchers in response to literature are careful to avoid defining "good" reading in terms of specific *types* of response, an underlying assumption seems to be that developing a sophisticated *repertoire* of response options to use in a variety of reading situations should be a major goal of literature instruction (Beach & Hynds, 1991, p. 459)

The present study sought to accomplish that objective, that is to broaden the repertoire of response options available to elementary age students through the use of a reader-response approach to literature. Here, a reader-response approach was used to undergird instruction which emphasized and elicited readers' personal interpretations and interactions with text, both of which involve a reader's perception of, association with, and evaluation of text.

The purpose of this descriptive research was to examine students' patterns of thinking about literature, as evidenced in their writing, in response to prompts designed according to reader-response theory. We hypothesized that through instruction designed to elicit students' personal interactions with text, they would move beyond literal recall of information about literature they have read or heard and, in addition, utilize critical thinking skills such as analysis and evaluation.

METHOD

Subjects

Subjects were 61 fourth grade students (34 boys and 27 girls) enrolled in two heterogeneously grouped, self-contained classes in a suburban community in the Southwest. The sample included students from upper, middle, and lower socioeconomic families, with the majority from the middle range. Students from multiethnic backgrounds comprised 25% of the sample in each classroom. The sample included students from Filipino (7), Hispanic (5), Chinese (1), Korean (1), Vietnamese (1) and Maltese (1) families. None of the students in these two classes were in ESL programs at the time of the study.

The two teachers in the study shared materials and ideas, and were similar in their reading and language arts instruction. They implemented the same reading curriculum, which included use of (1) a literature-based basal program 4 days per week, (2) whole-class sets of tradebooks one or 2 days per week, (3) daily independent reading of self-selected books during sustained silent reading, and (4) daily reading of various literature selections by both teachers to their students. Whole-class instruction (without ability grouping) was used in both classes. The literature-based basal program was in the first year of implementation in the district. Although it provided a variety of questions, both in the teacher's manual and in students' texts, that required more than literal retelling, the majority of the questions were not reader-response questions. For example, a question typical of those appearing in the students' texts followed an excerpt from *Charlotte's Web* by E. B. White, "Why did Charlotte weave the words 'Some pig' into her web?" Such questions were used to induce class discussions following literature-based basal readings. For the purpose of this study, reader-response questions were used predominantly in conjunction with reading selections other than those presented in the literature-based basal.

Procedures

Data collection. Teachers were given a list of reader-response prompts (see Appendix A) which their students used as a basis for journal writing and classroom discussions about literature they had read or which the teachers had read to them. From October 1989 to June 1990, teachers integrated the use of these prompts into the curriculum once or twice weekly. For example, students would listen to their teachers read a chapter in a book, or they would read from class sets of trade books or self-selected books. Each teacher would then select one of the prompts, read it to the students, and ask them to write responses in their journals for approximately 10 minutes. Although students did not hear or read each other's written responses, occasionally reader-response prompts were used to spark discussions about literature.

In June, both teachers also used a non-reader-response prompt, "Tell me about your book," to elicit students' written responses to self-selected books they were reading. This is defined as a non-reader-response prompt because it focuses exclusively on the text and not the reader in relation to the text. The purpose of using this prompt was to provide written samples that would allow us to compare response patterns from a non-reader-response prompt to those collected throughout the year using reader-response prompts.

Data analysis. Analysis was driven by the following question: What patterns of thinking would be displayed in students' writing in response to reader-response and non reader-response prompts? We used Applebee's (1978) content analysis scheme, derived from Piagetian categories of cognitive development, because it categorized responses in terms of students' use of critical and higher order thinking skills. In addition, Applebee's research focused on responses of students in the same age group as our sample. Two scorers, using Applebee's (1978) categories, were trained to analyze students' responses. These categories are as follows:

1. Preoperational Thought—Only literal details of story are given. An evaluation, if offered, is a general opinion, such as "The story was nice."

2. Concrete Operational Thought—The story is summarized. Evaluation, if offered, is based on simple categories, such as "funny, boring, exciting."
3. Formal Operational Thought, Stage 1—Analysis is given of characters, plot, or the way a writer writes and cause/effect relationships are described in terms of story evaluation. In addition, the reader may personalize story events by connecting the story with his own life or may empathize with a character or situation.
4. Formal Operational Thought, Stage 2—This category includes elements of Category 3, but also includes generalizations from the story to the world at large, making reference to what the story means in terms of the reader's life and/or the world as she knows it.

We selected and coded for analysis three representative responses from each student log: one from the beginning of the year (coded A), one from the middle (coded B), and one from the end (coded C). Additionally, each students' non-reader-response writing sample was evaluated (coded D).

Using separate coding sheets, the scorers analyzed and rated each response according to Applebee's (1978) categories. Two trained scorers worked independently, marking each response on a scale of 1–4, representing Applebee's categories (e.g., a 1 denoting Category One, Preoperational Thought, and so forth). Tally sheets were then analyzed, and where disagreement occurred between the two scorers, a third trained reader made the final decision. Interrater reliability was .87.

Frequencies were calculated for each response category for both reader-response ($N = 183$) and non-reader-response ($N = 58$) writings. Percentages were then calculated (see Table 1). Examples of responses classified in Categories 2 and 3 follow.

Student samples. The non-reader-response prompt, "Tell me about your book," resulted in the following Category 2 response, typical of most responses to this cue.

> My book was *Double-Dare O'Toole* by Constance C. Green. The main characters were Mr. Plankins (the principal), Fex O'Toole, Fex's Baby, and the gang. The setting was at school and home. In the beginning of the book, Fex was double-dared to put a note in the principal's office. It said, "You're A Pig Plankins." In the middle it talked about Fex's weekend, Friday and Monday. At the end Fex, a twelve-year-old, rescues a tot from a river. It was in newspapers and on TV. The big thing was will Fex ever learn to resist DOUBLE DARES? And he kind of did. (Erin 6/13/90)

In her response, Erin named characters and setting, and summarized story events in chronological order. However, she did not attempt to analyze the text, nor did she relate the characters or story to her own life or experiences.

The two reader-response cues which prompted the following samples, respectively, were "How do you respond to the story so far?" and "How does the story make you feel?" The following Category 3 responses related to the book *Night of the Twisters* by Ivy Ruckman.

> I responded to this book sort of sadly. I responded sort of sadly because Danny, Ryan, and Arthur are in that basement alone. Their mom is either on the road while the tornado is in progress. Dan thought that his mother got thrown out of her car and into the twister. He also thought that she could be *dead.* If I thought my mom was dead I'd be freakin' out and crying my brains out. That's what makes me sad. Then he thought she could have been at Mrs. Brinkley's house. And that changed the whole story. (Danny 3/90)

> *Night of the Twisters* makes you feel like you're really there because they have things like the chairs were moving and everything upstairs was bumping into each other. The furniture was all moving around. She told us at the end of the chapter that when he looked up out of the basement that he could see the dark sky right above him. I think this book gives you chills and makes you feel like you're actually there. It is an adventurous book and if you started reading it, you wouldn't want to stop! (Jill 2/90)

In both instances, students do more than retell story events. They analyze what they have read and give elaborated reasons for their evaluations. Danny empathizes with characters in the book and relates the story to the way he might have felt had he been in the tornado. Jill notes a cause/effect relationship between the text and her subjective reactions to it. She analyzes the way story events make her feel as if she were actually there.

RESULTS

A total of 183 reader-response cued writings and 58 responses to the non-reader-response cue were analyzed and classified according to Applebee's (1978) content analysis scheme. The non reader-response prompt, "Tell me about your book," elicited responses, 82.8% of which were classified in Category 2, in which there was summarization but no analysis of the story, whereas only 17.2% of students responded with patterns classified in Category 3 (see Table 1 for full reporting of results).

When cued with reader-response prompts, 88% of students' responses were classified in Category 3, which means that students engaged in critical thinking beyond the literal and concrete. The following writing samples exemplify the Category 3 responses found in students' writing to reader-response prompts. Jennifer was reading *Island of the Blue Dolphins* when she responded to the prompt, "If you were a teacher, would you read this book to your students?"

> Yes, I would because I think reading is important. I would read this book to my students if I were a teacher. This book I would rate an A+. I like how there's adventure in it. It sort of makes you feel like you're in the story. I can imagine what devil fish would look like. The details are so good you could see what is happening.

In Jennifer's response, higher level thinking is evident through her evaluation, which she supports by focusing on how the book makes her feel and on an analysis of the way the story is written.

Table 1

Percentages of Students' Written Responses Classified According to Applebee's Categories

	Category 1 Narration	Category 2 Summarization	Category 3 Analysis	Category 4 Generalization
Prompt mode				
Reader-response	3.3	5.5	88.0	3.3
Non reader-response	0	82.8	17.2	0

Sara's response to a chapter in the book *Castle in the Attic* includes higher level thinking in her analyses of plot and character and what effect they had on her feelings about what she read. She is articulate about the "lived-in" experience the reading has for her. Her response is personal as well as analytical:

> This chapter made me feel like I was in the story or I was in the scene right when it happened and I was hiding in the stable too. But of course I really wasn't there because I'm human and this is just a story. It also makes me feel happy and neat and of course it makes me feel lucky because William is lucky. He got the castle and the knight came alive and William didn't even believe it at first. But then he decided to really believe it. Now that's the way I felt about this chapter.

DISCUSSION

Research evidence of the past decade suggests that instead of engaging students actively in meaning construction, there has been a tendency to provide questions and cues which focus students' responses to text primarily at literal and concrete levels (Durkin, 1984; Mullis & Jenkins, 1990; U.S. Department of Education, 1986). Results of this study suggest that a reader-response approach provides students with a vehicle to do what they are capable of, that is, going beyond literal response and engaging in thinking which involves analysis of text from a variety of perspectives.

This research suggests that more abstract, analytical thinking is not reserved only for older students (unlike what Applebee found in his 1978 study), but that the cue, itself, supports analytical thought. This finding is consonant with Resnick's (1987) statement:

> The most important single message of modern research on the nature of thinking is that the kinds of activities traditionally associated with thinking are not limited to advanced levels of development. Instead, these activities are an intimate part of even elementary levels of reading, mathematics, and other branches of learning—when learning is proceeding well. (p. 8)

Furthermore, Resnick (1987) suggests that our failure to promote higher order and critical thinking skills may lead to difficulties in learning even in elementary school.

Although developmental trends, as they relate to capabilities for thinking and learning, exist, the perspective that there are sequential, age-related stages of learning tends to underestimate children's capabilities (Flavell, 1985). Even though Piaget affirmed the sequential nature of the stages in his theory, it was his contention that the point at which children reach each stage is dependent less upon their ages than upon their educational and cultural experiences and social interactions (Piaget, 1971). The influence of prior knowledge and experience on an individual's abilities to construct meaning supports current views of reading as a transaction between a reader and a text, and is consonant with reader-response theory.

Results of this study indicate that fourth graders' ability to engage with text at levels of analysis and elaborated evaluations is not a function of age, but rather is a function, at least partially, of instruction. In this case the instruction, designed according to reader-response theory, appeared to promote readers' personal interactions (i.e., transactions) with text, and, in doing so, actively engaged the readers, and promoted critical thinking skills of analysis and evaluation.

The results are dramatic. Reader-response prompts promoted higher level thinking to a much greater extent than the non-reader-response prompt of "Tell me about your book." It is our contention that the reader-response prompts supported students' thinking at levels beyond the literal and concrete. Future research might compare individual student's responses to a text when both reader-response and non reader-response prompts are used consecutively. In this way, it might be substantiated that the prompts themselves influenced the differences found in this study between students' responses.

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APPENDIX

Reader response prompts, used as cues for log entries, compiled from Farnan and Kelly (1989), Myers (1988), and Probst (1988a):

1. What character was your favorite? Why?
2. What character did you dislike? Why?
3. Are you like any character in the story? Explain.
4. If you could be any character in the story, who would you be?
5. Does anything in this work remind you of your own life or something that happened to you?
6. Do you like this story? Why or why not?
7. Do you think this is the best title for this story? Explain. What do you think the title means?
8. Would you change the ending of this story in any way? Why?
9. What kind of person do you think the author is? Why do you say this?
10. How do you respond to this story so far?
11. Do you share any of the feelings of the characters in the story? Explain.
12. Would you like to read anything else by this author? Explain.
13. What do you feel is the most important word, phrase, paragraph in this story? Explain why it is important.
14. If you were a teacher, would you want your students to read this story? Why or why not?
15. What was your first reaction to this story? Describe or explain it briefly.
16. How does the story make you feel? Explain.

BART: A CASE STUDY OF DISCOURSE ABOUT TEXT

Susan I. McMahon
University of Wisconsin, Madison

Laura S. Pardo
Allen Street School

Taffy E. Raphael
Michigan State University

This study explores a fifth-grade student's response to literature in a variety of contexts and over time. It reflects a response to the movement toward literature-based reading and writing instruction and the need to explore the changing role of the teacher, the type of appropriate instruction, and the relationships among changes in teachers' roles, instructional support, and students' response to text.

Our case study of Bart (student selected his own pseudonym), a student in Laura Pardo's fifth-grade classroom, occurred throughout the fall semester as we gathered information along three dimensions important to understanding a phenomenon: *people, contexts,* and *time* (Hammerly & Atkinson, 1983). Our observations and analyses were informed by previous research in response to literature, exploring types of response and their instructional contexts. Although much of our understanding is based on high school English or literature classrooms (e.g., Beach & Hynds, 1991), this research provides a starting point to address the questions: (a) How can we describe readers' responses? and (b) What are current instructional contexts for response?

How Can We Describe Readers' Responses to Literature?

Historically, research into reader response has focused on either the types of response or its development. More recently, Langer (1990), using a think-aloud procedure with middle school students, explored the *process* of response, examining both the language students used to explain their response to text and the thought this language represents. From her data, Langer suggested reading is an "act of envisionment building" in which readers may assume four stances. The stances are "momentary . . . subject to change in response to subsequent thoughts that may be (but are not necessarily) text-based" (p. 231). Thus, she emphasizes the interpretative nature of reading.

The four stances are: (a) being out of and stepping into an envisionment, in which readers use their prior knowledge, experiences, and some of the surface features of the text to begin to construct their envisionment; (b) being in and moving through an envisionment, in which readers are "carried along" through their meaning-making, using information from the text, their own experiences, and prior envisionments as they read; (c) stepping back and rethinking what one knows, in which the envisionment is used to influence readers' prior knowledge, rather than vice versa; and (d) stepping out and objectifying the experience, in which readers react to the content of the selection, the selection itself, or the reading experience.

Beach and Hynds (1991) note that this process of response is influenced by readers' "personality characteristics, stances and attitudes toward reading, knowledge of social and literary conventions, and experiences in social and institutional contexts" (p. 468). They further note that all these reader variables exist within a context that also includes a range of text, curricular, and instructional factors. Despite our extensive information about variables that enter into the types of response students make to literature and some studies investigating response of elementary-aged readers (cf. Galda, 1982, 1983; Hickman, 1983), we know relatively little about younger students' response to literature. In need of study are attempts to describe variation in young reader's oral and written response and the development of this response across contexts and over time.

What Are Current Instructional Contexts of Response to Literature?

From observational studies of high school classrooms, Beach and Hynds (1991) note a transmission model dominates instruction. The teacher's voice is strongest, with students' expressions often inhibited. Literature instruction and, by implication, opportunities for response, are often the domain of those in the upper tracks, while seatwork and other drills on instructional strategies are prevalent with students of lower reading abilities. Such a model is consistent with findings from Applebee's (1989) and Walmsley and Walp's (1989) work at the Center for the Study of Literature, and with studies of elementary schools by Allington (1983), who found that students in the lower reading groups had less opportunity to read connected text and spent more time in practice of discrete and isolated skills. Cianciolo (1988) has argued that even in classrooms where literature is prominent, the literature is used as a source for comprehension instruction, rather than to elicit students' genuine response.

Beach and Hynds (1991) detail assumptions about reading, readers, text, and curricula instrumental in developing instructional interventions to enhance elementary readers' response. Assumptions about reading include focusing on reading as a transactive process in which meaning evolves over time and includes emotions as an integral part. Assumptions about readers include recognizing the prior experiences that influence the meaning they construct, that their response is not independent of the stance they take toward the text, and that the development of readers' abilities are contextually based. Assumptions about text recognize that any text exists in reference to other existing texts (i.e., intertextuality), and that text structures are not independent, but related to the knowledge structures of the individuals and the orientation and purposes they bring to the reading act. Finally, assumptions about curricula must involve recognizing that successful test taking is not the same as understanding, "knowledge" about conventions is not equal to "achievement," and that large scale normative tests (i.e., comprehension and other tests of reading achievement) "fail to recognize the incredible range, diversity, and complexity of readers' responses" (Beach & Hynds, 1991, p. 479).

The Current Study

The purposes of the current study are to extend efforts to understand how the process of response occurs for elementary readers and to explore the nature of the instructional contexts that create opportunities for the development of elementary readers' response. We examine Bart's processes of response within a classroom context that reflects the assumptions about literacy instruction noted by Beach and Hynds (1991). The specific question we address is: What patterns and/or changes do we see in a fifth-grade student's response to literature across texts, contexts, time?

METHOD

Using the dimensions of people, context, and time (Hammerly & Atkinson, 1983), we observed and drew samples for the case study. The *people* dimension focuses on Bart. The *context* dimension includes texts (i.e., written and oral responses to selections including short stories and articles, picture books, and a chapter book) and settings (i.e., working individually, in a small group and in whole class discussions; and participating in interviews). The *time* dimension occurs over the course of the fall semester of the academic year.

Participants

Bart is one of 27 fifth-grade students in an urban neighborhood school with students from a range of ethnic backgrounds. At the beginning of the year, Bart was described as an engaging and verbal student who sought the approval of both teachers and peers. This sometimes led to conflicts in that Bart engaged in behaviors designed to please and perhaps entertain his peers, behaviors that the teacher, principal, or librarian found less amusing. However, Bart worked as hard to satisfy academic expectations as he did to entertain his peers and operated within the average to high-ability range. Bart seemed to be well liked by both his peers and the adults in the school, and comfortable with himself. His choice of pseudonym reflected his identification with Bart Simpson as his alter-ego.

Through the ongoing analysis of the data, certain patterns emerged that made Bart an interesting student for this case study. First, unlike other students, who tended to remain closely text based in their responses (McMahon, 1990), Bart consistently moved beyond the text from the beginning of the year. Second, as the study progressed, we noted Bart's changing attitudes about war and death during a unit about World War II and Japan. Finally, while we knew he was of mixed ethnicity, during the unit he revealed that part of his heritage was Japanese and that he had been to Japan the previous summer to visit relatives. Also, Bart's grandmother had been living in Japan during the atomic bombing of Hiroshima and Nagasaki, giving him a more personal link to the stories. We then refocused our observations of him looking at the influence of these factors on his responses.

Types of Data Collected

Two categories of data were collected and will be discussed in the two sections of the analysis. The first includes performance-based assessment measures Bart completed with the rest of his class over a 4-day period in early fall. The second includes a series of transcripts of oral discussions, field notes, interviews, and written documentation during a unit on World War II and Japan.

Performance-based assessment. During a whole-class activity, Bart participated in reading, writing, and discussing two selections, one narrative (*Cloudy with a Chance of Meatballs*, Barrett, 1978) and one expository (*The Male Emperor Penguin*, McDaniel, 1990). This assessment was designed to provide information about where students started in the way they responded to text. Each selection was organized into a booklet for the written response such that there were six to eight breaks in the text. At the end of each break, a general prompt was included followed by six to eight blank lines. For both narrative and expository texts, students were given a passage booklet and asked to read the selection and stop at points marked. At these points they were asked to share what they were thinking about the story. When students had completed the activity, they turned in their reading material and were asked to complete the selection critique, asking them what they thought the author had done well and what might be changed. On a subsequent day, students were given all their materials back and asked to think about and list three things they would like to discuss in their small groups. They then met in their small groups, and discussions were recorded for later transcription. Discussions lasted until students seemed to have exhausted their comments, usually 10 to 20 minutes.

World War II/Japan unit. Baseline information about students' responses to chapter books and their ability to synthesize across related texts involved a 6-week unit on World War II and Japan. Texts included *Sadako and the Thousand Paper Cranes* (Coerr, 1977), *Faithful Elephants* (Tsuchiya, 1988), and *Hiroshima No Pika* (Maruki, 1982). Students read and critiqued the chapter book, *Sadako*, over a 3-week period, making daily entries in a reading log and discussing their entries in small and large groups. They then listened to and read *Hiroshima No Pika* over a 2-day period, then repeated a similar schedule for *Faithful Elephants*. One synthesis activity involved comparing and contrasting the two picture books, whereas another focused on writing a synthesis that examined each book's contribution to a general theme identified by each student (e.g., "unfair dying," "atom bombs dropping"). An integrated multicultural activity involved a visit by a Japanese-American whose family is from Hiroshima. She discussed her family's experiences during the dropping of the atom bomb and the meaning underlying paper cranes. She ended by teaching them to make paper cranes to send to the peace museum in Japan.

Written documentation from the unit included entries in Bart's reading logs and his synthesis papers. Field notes were collected twice a week, from observing Bart as he participated in small-group and whole-class discussions, as well as when working on his own. Transcripts were made of each of the small group discussions, and Bart was interviewed during and at the end of the unit to explore his thinking behind his written responses and comments during discussions.

Data Analyses

Data analyses were ongoing during the data collection using methods recommended by Spradley (1980) and Bogdan and Biklen (1982). During data collection, the three authors and a research assistant held weekly meetings. During the meetings, we focused on patterns we saw in Bart's response activities, how these related to patterns we saw in other students, and potential categories emerging from the data that could help focus questions and further observations and interviews. Concurrently and subsequent to the data collection, the data was then indexed, sorted, and coded according to the themes and patterns we had identified.

RESULTS

In discussing what we learned from Bart's case study, we begin with the performance-based assessment, focusing on the differences in Bart's response to narrative and expository text. For the second analysis, we focus on Bart's response over time, including his changing perceptions about war, the influence of his prior knowledge and interests, and evidence of intertextuality.

Performance-based Assessment

Bart's written responses to the narrative and expository texts reflect his understanding of the different functions of each. In his *stepping out* stance, Bart wrote, "I think it was very creative I though[t] it made sense almost everything I wrote down went with the story . . . but it was a ok of a story . . . ." In contrast, when critiquing *The Male Emperor Penguin*, Bart wrote, "it was a article that you can learn things about. I just learned that penguines hold their babies on their feet it was a good article." Bart's responses suggest that for narrative text, success is defined in terms of creativity, whereas for expository text, success stems from whether he learned something.

Bart's responses during his *stepping in* and *moving through* stances provide further support for his awareness of differences between the two types of text. For the narrative, he seems more inclined to draw on his prior knowledge and move beyond the information in the text, whereas for the expository he seems focused on maintaining his envisionment. The first evidence emerged after reading the first few paragraphs in each selection. For *Cloudy with a Chance of Meatballs*, he wrote "it was probably about a pancake coming alive like the gingerbread man only called the pancake man . . . ." Bart draws on his prior experience with a story about a gingerbread man to consider what he is about to read. In contrast, after reading a few paragraphs of *The Male Emperor Penguin* he merely summarized what he had read in those two paragraphs: "It might be about Penguins and their babby eggs—I should say their babbies. I(t) might be about how to keep them warm and how to hold them."

The second example occurred during the *moving through* stance. His written responses to the narrative all reflected a relationship to what he had read, though he continued to move beyond what had been presented in the text. At one point he noted, "maybe there won't be any weather three times a day and they wiil starve and maybe even die what could they do? . . . I would find deer rabbit or even chickens and kill them and eat them over the fire in lansing weather does not have weather three times a day." The first part apparently refers to the text section that stated "there were no food stores in the town of Chew-and-Swallow," whereas the other apparently reflects his disagreement with the statement "weather came three times a day, at breakfast, lunch, and dinner." Bart drew on his knowledge of hunting for food and of weather patterns. As the story's climax approaches and weather takes a turn for the worse, he suggested, "if it was like that in lansing everybody would be fat and it would make more work for people . . . cleaning up the food . . . everybody would be greedy and they would fight over the food . . . everything would be almost destoroyed because all the food making stains on the house." These responses demonstrate Bart's move beyond the text by using his prior knowledge and experience as the central focus of his response, rather than the immediate text. In contrast, throughout reading *The Male Emperor Penguin*, he merely restated and summarized what he had read in the article, such as "May be the wind will stop blowing hard and it wont be so cold for the penguins . . . the mom will go back to the sea and bring the baby penguine food so it won't starve and die she will keep doing it intell the penguine can feed his self."

The third example is seen as Bart *stepped back* and prepared for his small group discussion. He generated questions about each selection. Not surprisingly, his questions about the narrative continued to focus beyond the text, whereas those for the expository selection are text-based. For *Cloudy*, he asked, (a) "Don't they have any healthy food to eat than eating high calories food," and (b) "Why does it rain food why can't they Just buy it or grow a garden"? These questions addressed issues not found in the text, bringing in Bart's own ideas about food and his link to reality. For *Emperor Penguin*, he asked: (a) "How come the penguins hold their eggs with there feet," and (b) "Why does the emporior have the babby on his feet when hes young"? Both these questions are directly taken from statements in the text.

In summary, the performance-based assessment suggests that Bart was well aware of the different functions of expository and narrative text, that he draws on his own prior experiences in his response, that he is able and willing to engage in interpretation and questioning of the texts he is reading, and that he demonstrates to some extent that elementary students reflect different stances during the process of responding to two selections. However, to move beyond these initial ways of understanding response, we examined Bart's written and oral response in different contexts and over time.

World War II/Japan Unit

As Bart participated in the unit, several themes emerged. First, there was an interesting change in Bart's concept about war. Second, there were numerous examples of how Bart's prior knowledge and interests influenced his response.

Bart's concept of war. In the initial sections of the unit, Bart focused on weapons to fight a war and the idea that people died. There was little evidence that Bart questioned the idea of war, the outcomes, or made any value judgment. In one of his reading log entries, he drew a figure of the Peace Day carnival being bombed (see Figure 1). Bart shared this picture during a small group discussion, saying, "I drew, um, that um, airplane dropping a bomb on that fair. Ant there's dead people laying on the ground. [*He laughs*] And um, it exploded and gas is killing them. They're all falling on the ground and their eyes are popped out. And they're dead. And they fell off the roller coaster, splattered. [*He laughs again*]" (October 1). There was much laughter, a general sense that war and bombs can be funny, and the drawing reflected the joke. Observational data indicated that reaction was what Bart had intended, and

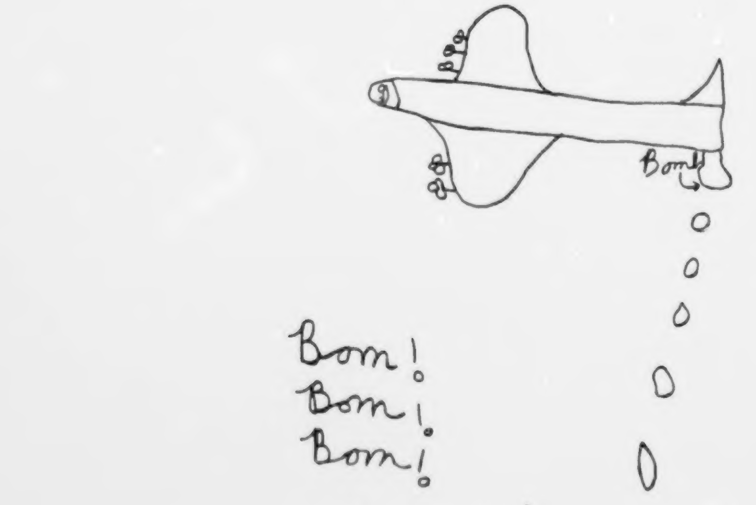

Figure 1. Bart's reading log entry, September 28, 1990.

he seemed satisfied. In fact, Bart's influence on his peers is seen in that two of the students added a plane dropping bombs to the pictures they had already drawn.

Later in the unit, Bart made an entry in his reading log depicting Sadako's funeral (see Figure 2). There are several points to notice. First, Bart drew tears on Sadako's parents faces. Second, he drew bowls of rice and egg rolls on top of her tomb. When interviewed about the picture, he stated that these were Sadako's favorite foods and he thought she would have liked them. He was beginning to think in terms of the victims of the war.

A few days later, Bart listened to and read the picture book, *Faithful Elephants*, and noted after examining the cover and the book and some pictures that "It might be about people using animals to fight in the war or it could be about using animals weapons like elephants tucks, training them how to use animals weapons to kill shoulders in the war." At this point, his initial response was to think of the elephants as weapons. The story relates the tragedy of having to put zoo animals to death during the days of extensive bombing, to prevent their escape and potential harm to residents of Tokyo. After reading the book, Bart was subdued and commented to the teacher, and later in his log, that he felt very sad. Later, in sharing ideas with a small group of peers, Bart said, "The topic I wanna share about is the elephants getting no food. The elephants were innocent. They didn't do one thing. They didn't do one thing. They were innocent. If they [the zoo keepers] loved them so much . . . they could have been alive, right? And they could've been happy. And I bet you, I bet you that bomb didn't even hit that zoo" (October 29).

As the unit progressed, Bart began to see war as something real, specifically that one aspect is the death of innocent people. In a synthesis activity for the three narratives in this unit, he met with his small group to talk about themes and ideas that they could address in their papers. During the discussion, a student who had copied Bart's idea of drawing planes and bombs criticized Bart for the drawing, saying that it was "really bogue." In a brief conversation that followed, the students shared their feelings that war was sad, and that a lot of innocent people and animals ended up hurt. Bart began his synthesis paper with, "I am going to talk about 3 really good Japanese books. These 3 books are about a bomb killing Elephants and people." On a planning sheet he indicated that his self-selected topic for the synthesis paper would be the killing of innocent people and animals because of war.

As his ideas about war changed, he seemed to express greater sensitivity to death. Near the end of *Sadako and the Thousand Paper Cranes*, Bart shared a passage with

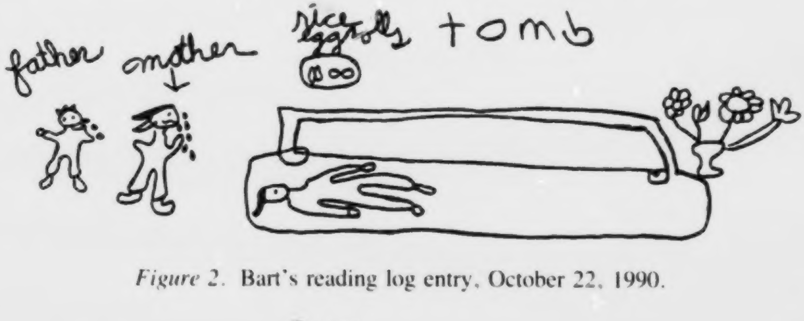

Figure 2. Bart's reading log entry, October 22, 1990.

his book club group about dying; "because I wanted to know what it's like dying . . . I always wonderd if dying hurted but it is like falling asleep slowly." The same feelings were revisited after *Hiroshima, No Pika*. Bart wrote in his log, "The book is a very sad one. I feel sorry for all the people who died. I would knot be able to talk about the bomb if it happened to me." He had a similar response to *Faithful Elephants*. "This story was more sad than the one Yesterday if I had elephants I would feed them every day so they would not starve." In his synthesis paper, he wrote that "Sadakio was Innocent she was only 3 or 5 years old. She was Innocent se did knot deserve to die . . . Many people died in Hiroshioma all those people were Innocent. The people that dropped the bomb on perl Harbor were not Innocent . . . . After a few days the father died from all the Ingeries he had. He was Innocent."

Prior knowledge and interests. Bart's responses were influenced by his background and his interests in different ways. During the World War II/Japan unit, his Japanese heritage emerged as being important as the unit progressed. A rather minor point in the *Sadako* story mentions that Sadako had seen a spider and felt lucky. Bart wrote about that event in his log, bringing it to his peers' attention for discussion for both the small group and whole class sessions. During an interview, he said that he had heard about the superstition before from his mother. On another occasion, during a small group discussion, he told his peers that his grandfather had died of leukemia. When his peers did not seem to respond, he brought it up again, saying, "I'm serious. I'm not kidding." Both instances reflect how one's own experiences determine what we find to be noteworthy in the texts we read. Bart went a step further than merely writing in his log, trying to engage his peers in a discussion about the ideas he found important.

Bart's multicultural background may underlie his attention to ideas that reflect different cultural practices. In *Hiroshima*, reference is made to lighting candles and putting them on the river to commemorate the dead. When a classmate raised a question about this part of the text, Bart wanted to explain. As Bart's explanation began to get complicated, he finally stopped and suggested that his classmates could see it in a movie, *The Karate Kid*. He seemed to accept unusual practices as "givens," attributing them to different cultural practices. In several other instances over the course of the unit, Bart would often respond with "It's their culture" as a way of examining unusual practices. Finally, as discussions focused on what current Japanese cities are like, Bart shared more frequently what had happened during his trip to Japan to visit relatives. He began to bring in souvenirs such as money, pictures, and candy which he shared with his classmates.

The influence of prior knowledge and culture played out in an unusual way in one instance throughout the story of Sadako. Early in the book, reference is made to the Peace Day carnival and Sadako's hope that they might have cotton candy. In Figure 1, note that Bart portrayed the bombs falling on a carnival. He had apparently applied his knowledge of an American carnival, complete with rides and attractions. He did not make the inference that the Peace Day carnival is a result of the bombing, but rather that they happened simultaneously. In one of his small group discussions, a peer told him that it didn't happen that way. Yet, throughout his log and his discussions, he maintained his idea that the atomic bomb fell on a carnival. During an interview, he told one of the researchers that the book had said that it happened that way. In short, although prior experience and knowledge certainly provide students with insights and developing ideas that may not be accessible to students without such background, the role of this experience is more complex than it may first appear (Maria & MacGinitie, 1981).

A second way in which Bart's interests influenced his response relates to evidence of gender preference as his preference for male characters emerged. This may be similar to what Sims (1983) identified in her work with black adolescent girls. She found that these students preferred books with strong black female characters. Similarly, Bart appeared to seek opportunity to identify with male characters. For example, in Bart's first entry in his reading log, he predicted that the story of Sadako would be about a bird named Sadako, and a boy and a pond. After that entry, students listened to the first chapter of the book. Bart then added to his prediction that, "he could be going to the pond and see that bird and that bird could be a spiret of his grandma or grandpa one of the two." Bart maintained his initial prediction, even though the text offered him evidence that Sadako is a girl. In addition, chapter one states that Sadako's grandmother has died of the atom bomb disease, but nothing of a grandfather is described. However, Bart added this male character to his response. Further, when Bart was asked to step back at the end of the story and offer suggestions to the author to improve the story, he wrote "they could put the brother in the story more . . . ." Bart did not mention adding more information about any of the female characters. He possibly wanted to have a main character to identify with, and he found that missing in the story. Finally, in his book critique of *Sadako*, he identified the author as a male, despite extensive class discussion of the author's name and reference to "her" throughout the unit. Bart wrote, "What the author did well . . . . He wrote about a true story. He used words in a mature way."

CONCLUDING COMMENTS

In her description of middle school students' response, Many (1990) noted the lack of information about students' differential stances regarding narrative and expository text, as well as information about stances students assume during the reading process. Bart's responses to the various texts he read and heard provided evidence that elementary students experience the process of response as Langer (1990) described. Bart's process of response was influenced by his cultural background and prior knowledge, his growing awareness of elements of literary text and genre, and by the content of the text itself. Within the various stances Bart took, we see examples of both efferent and aesthetic responses (Rosenblatt, 1985). That is, at times Bart's responses focus primarily on specific knowledge gained or on an analysis, albeit not very sophisticated, of the author's success with specific literary elements. However, there are other instances in which he focuses primarily on his own personal response in terms of a text's influence on him.

Bart's responses to the selections within the World War II/Japan unit provided insights into the importance of the instructional context. In this classroom, students not only read literature, they have opportunities to both write and engage in discussion about their ideas. Although there are instructional activities designed to enhance students' abilities to read and comprehend, the instructional context emphasizes the kind of deep reading and extended discussion most likely to meet the assumptions Beach and Hynds (1991) suggest are critical to the development of response.

In conclusion, we have seen through the writing, talk, and mind of one child, evidence that elementary readers are clearly capable of response to literature, both fiction and nonfiction in a range of genre and structures, that parallels that of older, and perhaps more sophisticated readers.

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EVALUATING THE EFFECTS OF A READ-ALOUD/RESPONSE PROGRAM

James V. Hoffman, Nancy L. Roser, Jennifer Battle, Cynthia Farest, Priscilla Myers, and Linda Labbo
University of Texas

In *Becoming a Nation of Readers*, Anderson and his colleagues (Anderson, Hiebert, Scott, & Wilkerson, 1985) argue that the " . . . single most important activity for building the knowledge required for eventual success in reading is reading aloud to children" (p. 23). Morrow, O'Conner, and Smith (1990) remind us that Huey offered similar advice in 1908 when he wrote: "The secret to it all lies in parents reading aloud to and with the child" (p. 9).

Investigations of parents and teachers reading aloud to children are increasing (e.g., Sulzby & Teale, 1991; Teale, 1984). Most of these studies have been attempts to describe and document the interactions that occur during storybook reading time. However, systematic investigations of the effects of reading aloud to students in classrooms on a short-term (e.g., Elley, 1989) or a long-term (e.g., Feitelson & Goldstein, 1986) basis are relatively few in number and less conclusive in their findings. Perhaps the most recent and significant study attempting to document student learning associated with participation in a literature-based program was reported by Morrow et al. (1990). They found that students immersed in a literature-based program (i.e., a program that relied heavily on such features as interactive story reading, reading for pleasure, story retelling, repeated readings of favorite stories, etc.) scored significantly better than the control group students on story retellings, attempted reading of favorite stories, researcher-devised short-term comprehension tests, and other measures. However, they did not find statistically significant differences between the experimental and control groups on standardized measures of reading comprehension.

Although findings from studies like Morrow's and others (see Tunnell & Jacobs, 1989) offer some evidence for the important role that literature can play in literacy development, they do not address the specific contributions of reading aloud. Many important questions related to the contributions of reading aloud to school children to successful literacy development remain unanswered, and many more unaddressed. This investigation is a report of an exploration of student learning associated with being read to and being given opportunities to respond to literature in a program we titled Language to Literacy (LtL). We defined successful development rather broadly to include a traditional measure of reading achievement in addition to measures of attitude toward reading and knowledge of literature.

METHOD

Participants

Participants in this study were two groups of second-grade teachers and their students in a suburban San Antonio school district. The experimental group consisted of 10 volunteer teachers from three schools implementing the Language to Literacy (LtL) program. Six teachers from three other schools in the same school district (on a waiting list to implement the program the following year) and the students in their classrooms also volunteered to participate and formed the control group. The control group schools were identified by the district and described as similar to the experimental schools in terms of the teaching faculty (e.g., years of experience) and the student population served. For example, the percentage of minority enrollment was 48% for the three control schools and 46% for the three experimental schools. All of the teacher participants were female. The gender breakdown for the student participants was 54% female and 48% male. Only the data from those students who received parental permission to participate in the study were included in the data analysis.

Project Background

The elementary reading program in the school district is in a period of transition, yet currently tied to a basal program. However, the leadership in the district actively encourages teachers to supplement/complement their basal program with the use of trade books in instruction. Teachers in the experimental group were offered a year-long program of inservice with the read-aloud facets of the LtL program. The central focus of LtL is to offer children quality literature organized into unit study as part of their daily language arts curriculum. The literature units provide teaching plans for sharing books that have some common feature (e.g., a similar topic, theme, author/illustrator, or genre). Each unit's organization is intended to establish the set for children's discoveries of connections among pieces of literature (see Cullinan, 1989; Moss, 1984). The "picture book" units contain 10 selections for reading aloud by the teacher during storytime over a 2-week instructional period. Both the inservice and the literature units included suggestions to teachers for sharing stories effectively (e.g., techniques for classroom organization and management, book handling, leading discussion, offering response opportunities, etc.).

Among the goals for sharing literature through a unit approach were these: (a) offering exposure to a variety of children's books to help children discover their own connections with literature, (b) expanding young readers' interests and improving their attitudes toward reading, and (c) helping children grow in language, reading, writing, and thinking skills.

Critical to the implementation of the LtL program is the use of a "Language Chart" which documents children's responses to the literature. The charts themselves are a variation on the webs and comparison charts used effectively by others (see, e.g., Cullinan, 1989; Norton, 1982). Language Charts are often constructed from butcher paper and sometimes ruled into a lattice or matrix with headings that help children to focus on the linkages among unit books, enabling their comparisons and connections to be displayed. After each book from a unit is read aloud and discussed, the students' responses are recorded on the Language Chart.

Procedures

Teachers in the experimental group participated in a total of 45 clock hours of workshops and discussion sessions related to LtL implementation. Most of this training was conducted at the beginning of the school year with follow-up discussion sessions scheduled throughout the year. The control group teachers were free to satisfy their staff development training requirement for the year by selecting freely from a variety of workshop options offered by the district (e.g., classroom management, writing across the curriculum).

The explicit expectation placed on each of the LtL experimental teachers was that they would: (a) read to their students daily from the units, and (b) record the students' responses to the books on the Language Chart. The experimental teachers were also encouraged but not required to elicit student responses to literature through writing and in other ways.

Measures

All students (control and experimental) took the Iowa Test of Basic Skills (Hieronymus, Hoover, & Lindquist, 1986) in the fall semester as part of the district-wide testing program. Several different posttest measures were administered at the close of the school year. These posttests included:

1. *Revised Huck Literature Inventory*. This inventory (Lehr, 1988) is designed to assess students' familiarity with children's literature. It is divided into five subsections related to literary genre categories (e.g., poetry, folktales, modern stories). The *Revised Huck Literature Inventory* was employed in this study as the primary measure of knowledge of literature.
2. *The Heathington Primary Scale*. The 20-item *Heathington Primary Scale* (1975) is an assessment instrument designed to measure students' reading attitudes. Respondents are asked to use a 5-point Likert-type scale (ranging from a very sad to a very happy face) to indicate how they feel about reading in varying places and times. The Heathington was employed in this study as the primary measure of reading attitudes.
3. *The Integrated Assessment System: Language Performance Assessment* (IAS). The *Integrated Assessment System* (Farr & Farr, 1990) is a series of reading/writing prompts designed to reflect an integrated form of reading/writing assessment in which students read a story and write responses that reflect both their comprehension and ability to extend the story through writing. Students' written protocols are scored holistically in three areas: content, grammar, and cohesion. The prompt titled "Nancy" was used in this study as the measure of literacy skills.

Because access time to the students for testing purposes was severely limited, not all of the posttest measures were administered to all of the students. The breakdown (in numbers of control and experimental students assessed on particular measures) is noted in the reporting of the results.

Teacher Implementation of Program Features

Contact was maintained over the course of the year with the experimental teachers through the inservice sessions. At the close of the school year, each teacher was interviewed regarding success in implementing the program in her classroom. At that time, informal observations confirmed that 3 of the teachers had not implemented the critical features of LtL program. In particular, one of these teachers was not reading to her students on a regular basis from the units and the other two teachers were not recording responses on the Language Charts as required. The data from the students in these three classrooms were dropped from all analyses. This left a total of 7 teachers and their students in the experimental group.

Similar interviews were conducted with control teachers focusing on how often these teachers read aloud to their students. It was discovered that storytime was just as frequent (i.e., daily) in the control classes as in the experimental classes. The major differences between the experimental and control classrooms centered on book selection, unit organization, and the use of Language Charts to record children's responses.

RESULTS

Performance by control group students on the ITBS was considerably higher ($M=63.3$; $SD=22.0$) than the performance of the experimental group students ($M=56.4$; $SD=28.2$), indicating that the control group students were achieving at a higher level than the experimental group students at the beginning of the study. Statistical analyses of performance on the dependent measures were run twice. These data were first analyzed with a simple ANOVA and next with an ANCOVA, using performance on the ITBS as the covariate. No significant differences in the outcomes were found between these two forms of analysis, in other words the patterns of performance found in each analysis were the same. Therefore, we report the results of the ANOVA using actual means and standard deviations.

No statistically significant differences were found in performance on the Heathington between the experimental and control groups [$X=75.3(12.04)$; $X=77.1(11.2)$]. Nor was there a significant difference between the performance of the two groups on

Table 1

Means (and Standard Deviations) for Student Performance on the Integrated Assessment System

	Experimental		Control	
	N	*M*	*N*	*M*
Response to Reading	74	2.24 (.74)	73	2.21 (.75)
Management of Content	74	2.19 (.67)	73	2.14 (.82)
Command of Language	74	2.25 (.72)	73	2.17 (.80)
Total	74	6.67 (1.99)	73	6.52 (2.23)

Table 2

Means (Standard Deviations) and Statistical Significance for Student Performance on the Revised Huck Inventory

	Experimental		Control		Significance	
	N	*M*	*N*	*M*	*F*	*P*
Mother Goose	38	4.6 (1.2)	46	4.4 (1.7)	.8495	.36
Poetry	38	4.9 (1.4)	46	5.5 (1.4)	3.2309	.08
Folktale	38	15.0 (2.2)	46	15.2 (2.0)	.0361	.85
Modern	38	19.8 (2.9)	46	16.7 (3.7)	17.1774	.001

the Integrated Assessment System (Table 1), although the direction across all subscales of the IAS favored the students in the experimental classrooms.

Significant differences were found, however, in student performance on the Revised Huck Inventory (Table 2). The overall effect on the Revised Huck was statistically significant ($p < .001$). Closer examination of the subscores indicates that the major contribution to these differences was attributed primarily to knowledge of modern stories.

In an effort to explore the interrelationships among the variables of interest, a correlational analysis was conducted for all major variables. The correlation matrix is presented in Table 3.

DISCUSSION

There are several important patterns of relationships suggested in the correlational analysis. First, student performance on the Heathington does not seem to correlate

Table 3

Correlation Matrix for All Performance Measures

	Performance Measures									
	2	3	4	5	6	7	8	9	10	11
1. ITBS Total	31*	.28*	.24*	.33*	.13	−.05	−.00	.03	.20*	.07
2. IAS Total		.93*	.96*	.91*	.60*	.19	.24	.56*	.55*	.01
3. IAS Response to Reading			.86*	.75*	.55*	.14	.27	.52*	.50*	.04
4. IAS Management of Content				82*	.56*	.20	.22	.51*	.52*	.00
5. IAS Command of Language					.60*	.20	.19	.57*	.56*	−.00
6. Revised Huck—Total						.54*	.32*	.73*	.88*	.08
7. Revised Huck—Mother Goose							11	.25*	.35*	.06
8. Revised Huck—Poetry								.10	.02	−.03
9. Revised Huck–Folktales									.47*	.07
10. Revised Huck—Modern										.08
11. Heathington Total										

*Statistically significant at the .05 level.

highly with any other measure. The absence of a significant correlation cannot be attributed to the lack of reliability of the instrument because our analysis of the reliability of subjects' performance showed reasonably high levels of internal consistency (alpha = .8346). The absence of a relationship is consistent with much of the previous research in this area. As examples, Deck and Barnette (1976) found correlations between reading attitude and reading achievement ranging from −.22 to .32; Lewis (1980) found a correlation of .17 between reading achievement and attitudes; and, in a review of literature, Wigfield, and Asher (1984) indicated typical correlations of .2 to .3 between ability and attitudes. Quinn and Jaday (1987) noted: ". . . though a meaningfully strong causal relationship between attitude and achievement has been widely assumed to exist, past research in this field does not provide clear evidence for such a relationship" (p. 366).

The absence of a statistically significant relationship among the measures does not argue against the potential importance of read-aloud/response programs on improvement in reading attitude. The failure to find differences between the groups can be more reasonably attributed to the fact that both groups were exposed to literature and that both groups had positive attitudes overall (following the interpretive guidelines suggested by Alexander, 1983).

An interesting relationship appears to emerge between the three other measures used in the study. The ITBS construct of Total Language is fairly independent of the construct of Literature Knowledge as measured by the Revised Huck. However, both of these measures show a moderately strong correlation with IAS performance. It may well be that the IAS comes closer to measuring the effects of literature instruction on literacy skills than does the ITBS in the sense that it reveals the contribution of literary knowledge to overall performance. Mean performance by the experimental group on each of the subscores of the IAS exceeds performance by the control group students (though not to a statistically significant level). Our failure to achieve statistically significant differences on the IAS may be attributable to the small number of participants in the study, the fact that students in the control group were achieving higher than the experimental group from the start, and/or the fact that the teachers of the control students were using a great deal of literature in their classrooms.

The significant contributions of this study appear at both the theoretical and practical levels. Our documentation of growth in knowledge of literature associated with participation in a read-aloud program finds theoretical significance complementary to Lehr's (1988) developmental study of children's responses to literature. Lehr reported a significant relationship between students' knowledge of literature and their ability to respond at a theme level to stories. The breadth (and one infers depth) of experiences with stories provides the building blocks for students to explore interconnections and build new levels of understanding. We have demonstrated in this study that knowledge of literature can be influenced positively through instruction. The challenge becomes one of exploring the connection between this building of background knowledge of literature and related growth in literacy skills and attitudes.

At the practical level, the findings from this study suggest the significant contribution that a thematic approach to literature study with systematic response opportunities (as reflected through the Language Chart) can play in nurturing growth. The simple admonition to "read to students" may serve well as a starting point and a rallying cry, but there is much more that can be accomplished through the application of sound instructional design—not instruction that reduces or fragments literature, but instruction that encourages the exploration of the constants, the creative forces, and the connections that are all part of an authentic literature experience.

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A COMMUNITY OF LEARNERS SELECTING AND DEVELOPING WRITING TOPICS

Elizabeth Ann Connell and Philip P. DiStefano
University of Colorado at Boulder

The topic is essential to the success of writing anything. Selecting a topic is part of the initial conceptual stages in which the writer somehow actively decides on a writing focus (Britton, Burgess, Mcleod, & Rosen, 1979). It is not uncommon for teachers to hear students of all ages complaining that they do not know what to write about. In a 3-year study that evaluated the effectiveness of an adopted writing curriculum, 90 students, representing Grades 3 through 12, consistently expressed, as their number one concern, the fear of not being able to come up with a writing topic on their own (Krendle & Dodd, 1987). Although teachers are tempted to remedy the problem of students not knowing what to write about by providing something like a "handy list" of possible topics, this is not the solution. Teachers' mandates of topics can actually compound the problem (Flower & Hayes, 1981a, 1981b; Graves, 1978–81, 1984) since students do not have the opportunity to develop voice and skill of narrowing topic and to participate in basic decision making (Graves, 1984).

The purpose of this study was to investigate how one fourth-grade classroom of students selected their own writing topics. More specifically, three areas were the focus for examination. First, the components of Writer's Workshop, as prescribed by Graves (1981) and Calkins (1986), were investigated as to how the mini-lesson, peer and teacher conferencing, and the sharing of students' writings influenced how, why, and what topics were selected. Second, the instructional context created by this type of writing community was examined as to how it influenced writing topic selections. Third, the manner in which the learner's unique background of experiences influenced topic selection was investigated.

Change over time and writing proficiency were two additional dimensions that were considered. The influences of writing proficiency were investigated in two ways: (a) the quality of student writing throughout the school year was examined and evaluated; and (b) a more in-depth examination of 4 students, who had distinctively different levels of writing proficiency (i.e., one proficient, two moderately proficient, and one limited) was made.

METHOD

Subjects

Located outside a major city, the general school population reflected a variety of ethnic groups with diverse learning and emotional needs. A full range of differing socioeconomic status levels was also represented. The fourth-grade classroom of students in this study consisted of two Native Americans, two Hispanics, one Hawaiian-Hispanic, and twenty Caucasians. Over half of the students qualified for the free lunch program. Approximately 50% of the students came from single parent families.

Procedure

Data were gathered over one school year using a variety of ethnographic data collection techniques: conducting ongoing formal and informal interviews, observing, taking field notes, and collecting and evaluating student writing products. Data were collected in three 5-week cycles. By collecting and analyzing data in cycles, the data were regrounded as a result of repeating and replicating data collection techniques within the same conceptual framework.

Whole-group observations (40 sessions), individual interviews of each student repeated for each cycle (75 interviews), interviews of the 4 focal students repeated at the end of each cycle, and select portions of the field notes were all analyzed using the Spradley's Domain Analysis procedures (Spradley, 1979, 1980). Student writings were analyzed holistically.

The bulk of the findings reported are a reflection of the data gathered from formal and informal interviews and the individual pieces of student writings. These data sources were confirmed by the findings made evident from the classroom observations. When interview and observational data overlapped, data were clustered together if found to support the same domain of information.

Cycle One. All instructional components typically represented in a workshop approach to the instruction of writing were evident throughout this cycle (i.e., instructional lessons, author's chair sharings, and conferencing), although conferencing was introduced late in the quarter. Writing lessons predominately emphasized writing process, in contrast to the teaching of writing forms or genres, and were usually extensions of reading lessons. During this cycle, however, one writing genre was a focus for instruction, the genre of mystery writing. Literature was frequently used throughout the language arts instructional time period for the primary purposes of providing writing examples and motivating students in hopes both of increasing interest in reading and appreciating a variety of literature books.

Cycle Two. Cycle Two began with writing instruction continuing to include direct instruction, author's chair sharings, and some peer and teacher conferencing. However, in the middle of this cycle there was an instructional shift. First, there was the formation of reading groups that also served as subgroups for writing instruction. While in these groups, students would frequently read their writings, followed by teacher and student comments. Less use of whole group sharings occurred using the author's chair format. The emphasis of the writing lessons also shifted. Previously lessons centered predominately around the writing process. Although the instruction of writing process was not abandoned, the study of writing genres (i.e., legends and myths) now dominated the focus of writing instruction.

Cycle Three. In Cycle Three the workshop approach to writing instruction was infrequently used and was replaced with a more traditional approach. There was an increase in assigned writing, and little peer and teacher conferencing occurred. The format of sharing in "Author's Chair" typically was for the purpose of providing a "listening" audience during which both assigned and unassigned writings were read. The dominant writing genres studied centered around various forms of poetry, the use of humor, and the characteristics of fairy tales. Because of teacher-perceived pressures to cover concepts in the content areas, occasionally the language arts block of time was also used for science and social studies instruction.

FINDINGS AND DISCUSSION

It was found that students used a number of different strategies to select their writing topics, and that these strategies fell predominately into the following three main categories: (a) reflecting on the specific components of writing instruction (i.e., lessons, author's chair sharings, and conferencing), (b) reflecting on influences contained within the context of school (e.g., reflecting on units studied, rewriting past written works, reflecting on displayed book jackets), and (c) reflecting on events occurring outside the context of school (e.g., personal experiences, home environment). Although this framework uses a simple format, none of these general categories had well-defined boundaries. In contrast, all "boundaries" were found to overlap and be interactive and recursive in nature. Because of this, writing topic selections were influenced in a variety of ways by many different factors, as students used a wide range of strategies. In other words, factors influencing topic selections could not be contained within the parameters of the school environment and its social context.

Upon closer examination of these three categories of strategies, three primary findings emerged from the data analysis and were shown to significantly impact writing topic selections: Finding One indicated that reflecting on personal experiences plays a powerful role in influencing writing topic selections even when students became more adept at using a wide range of different strategies. Also, as students became more socially conscious of wanting to impress their peer group with their topic selections, the frequency of writing about personal experiences revolving around pets and family decreased as students began reflecting more on entertaining and "hip" topics promoted by the media (e.g., reflecting on popular television shows and cartoon characters). Finding Two showed that, even when writing topics were unassigned, the teacher had a powerful impact on what and how writing topic choices were made, on a variety of levels. These levels were primarily threefold. First, students functioning within a learning environment that promoted different strategies for making topic decisions became more metacognitively aware of (a) their own self-generated strategies and (b) how to use these strategies as catalysts for promoting topic ideas. Consequently, both the range of strategies used to make topic selections increased, and the reliance on writing about personal experiences decreased. Second, the learning of writing genres had a powerful impact on writing topic selections in both the range of what students felt were appropriate topics when writing in a particular genre, and on the likelihood that similar writing topics would be repeated in the future. Apparently, the act of deciding on a writing genre prior to making a topic selection helped students define a range of choices they felt to be appropriate. And third, when the instruction of content-specific units was integrated into the instruction of language arts, and when the units were studied over an extended period of time, content specific themes were frequently reflected in what students selected as their writing topics. Finding Three indicated that, in general, students with different writing proficiency levels used both different and similar strategies when making topic choices. Least proficient writers tended to repeat only a limited range of strategies when making topic choices, and they appeared to benefit by first drawing and then using the contents of their drawing as a catalyst for writing ideas. Moderately proficient writers frequently reflected on previously studied writing genres and content-specific units, as well as on their personal experiences, as sources for their writing topic ideas. And, the most proficient writers tended to use a wide range of strategies when making writing topic choices; their topics typically reflected a wide range of topic selections.

Elaborating first on Finding One, in regard to the impact of personal experiences on writing topic selections, students were shown to rely heavily on their personal experiences for ideas, and personal experiences occurring outside of school played the greatest role. Especially in Cycles One and Two, students frequently reflected and focused on their personal experiences for writing topic ideas, and these experiences typically revolved around antics with pets, friends and family, as well as on personal interests and hobbies. Also, if events were highly valued by family and friends, as well as by the writer, then the likelihood of these personal experiences being considered for topics ideas increased. This finding illustrates how writers use the strategy of pulling from their personal experiences as they tap into their knowledge base and schemata (Bereiter & Scardamalia, 1987; King & Rentel, 1981).

The types of personal experiences reflected on for topic ideas were also influenced by some form of social approval from a listening audience. As students developed more confidence in viewing themselves as writers within a writing community, they became more socially conscious of how they were viewed by their peers as writers. As a result, several influencing social factors were made evident, beginning, for the most part, in Cycles Two and Three. One influencing social factor was inferred when examining reasons for the gradual shift from writing about experiences with pets, family, and friends to writing more about experiences based on the contents of media. Perhaps as these fourth-grade students socially "matured," impressing their peer group became increasingly more important to them. Perhaps it was no longer considered socially acceptable to be writing about one's pets and family, and, therefore, considering the media as sources for topic ideas was viewed as more sophisticated.

Social approval given by peers was also found to influence writing topic choice. As students became more socially conscious of wanting to impress peers with their topic selections, the power of writing for an audience appeared to have a greater influence on why a writing topic was selected in contrast to how the topic choice was made. When writing for an audience, topics were selected for the following three reasons: (a) students wanted a topic that was different from any topic previously shared, (b) students were motivated to be humorous and wanted to select topics that would entertain, and (c) students wanted a topic that would be positively recognized by both friends and teacher. All three of these reasons appeared to be socially motivated. Consequently, students, when sharing their writings, tended to react to their learning community with a sense for viewing it as a forum for (a) making or reinforcing friendships, and (b) receiving some form of positive response for writing efforts.

The second primary finding dealt with the importance of the teacher on writing topic selections. Even when topics were unassigned, the teacher had a powerful impact on what and how choices were made on different levels (i.e., metacognition, writing genres, and content). First, it was shown that as students, functioning in a "flexible" learning environment, became more metacognitively aware of their self-generated strategies and how to use these strategies for making writing topic decisions, the range of strategies used increased while the reliance on writing about personal experiences decreased. Gradually, students, when creating their initial writing focus, more frequently began to use strategies such as using pictures as catalysts, reflecting on information from content area materials, and repeating a topic by either writing another episode around this same topic or by repeating a topic but rewriting the plot. Consequently, as students became increasingly aware of their abilities as writers, they became increasingly aware of a variety of strategies that could act as catalysts for initiating their topic selections. Speculation was therefore made that these young writers were interacting with their writing process as a metacognitive experience. It was concluded that students were interacting with their knowledge of their writing ability and schema when using their self-generated strategies for determining writing topics (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981a, 1981b; King & Rentel, 1981).

Within the parameter of student-generated strategies used to select writing topics, learning writing genres had a powerful impact on writing topic selections. First, the range of what students felt were appropriate topics when writing in a genre was influenced, and second, the likelihood that similar writing topics would be repeated was increased. More specifically, first, in regard to the impact of writing genres on the range of topic choices, students allowed a choice of writing genre to assist them in formulating a writing focus. The act of first selecting a genre narrowed the student's focus of what he or she would consider to be appropriate topics when writing in a chosen genre. If a student had practiced writing in a genre, typically he/she had also associated themes with that genre. Also, students wrote repeatedly in genres they felt confident using, and they repeated similar topic choices when writing in these genres.

When students wrote repeatedly in a genre, frequently the quality of writing took on the characteristics of "form fitting." An example of this "form fitting" quality was when students were writing legends. After studying models of legends depicting how animals evolved, several students used the strategy of first selecting several animals, then, by comparing their similar physical characteristics, wrote a legend about how a "new" animal "came to be." These same students continued this form-fitting approach as they built their confidence when writing in a genre, and this approach was used repeatedly, until a new genre was introduced. Overall, students first determined an appropriate range of topics to consider and then inserted a minimum of new information into a previously written framework or syntactic structure.

In contrast to having difficulty thinking of a writing topic, some students had focusing difficulties due to bombardment with too many writing topic ideas all at once. When this occurred, writing topic selection strategies often took on the characteristics of attempting to combine many topic ideas. Typically, an incoherent writing product would result that rambled on and on, bouncing from one topic to the next. This writing experience reflected the characteristics of brainstorming on paper, but usually with a negative outcome. In this circumstance, brainstorming was not a part of a prewriting activity. Indeed, brainstorming was now being used as a strategy to produce a first draft. Unfortunately, this initial drafting stage usually became the final stage of writing for these frustrated students as they struggled to develop some form of coherent story line when trying to work with many writing topic ideas at one time. As a result, students struggling with too many ideas were found to benefit by using two general strategies: (a) reflecting on previously learned writing genres to help define a category of possible writing topics; and (b) approaching writing, at least initially, by using more of a "formula or form fitting" approach.

Another explicit instructional decision shown to influence writing topic choices was to integrate the instruction of content specific units with the instruction of language arts. Specifically, the frequency of reflecting on units of study for topic ideas typically increased if the themes and concepts of content related material were (a) integrated into the instruction of language arts, and (b) studied over an extended period of time (for at least one month). As a result, concepts related to specific units remained current, thus increasing the likelihood of content studied becoming a catalyst for selecting a particular writing topic. Memory searches or the reflection on prior knowledge and schemata with a subject also influenced why and how a writing topic choice was made.

When comparing students with different levels of writing proficiency, Finding Three indicated that least proficient writers used and repeated only a limited range of strategies when making topic choices, and they appeared to benefit by first drawing to spark topic ideas. The phenomenon of drawings acting as catalysts for topic ideas was made known when least proficient writers were being interviewed. During this time these students were able to generate writing ideas when reflecting on some form of drawing previously completed. Perhaps while these students were drawing some form of internal dialogue was taking place that helped to generate not only a topic idea but also some form of narrative around the drawings as they were being created. In previous research (Graves, 1978–81), various case studies and scattered data on young children support this same finding, but with 7-year olds. Perhaps reflecting on drawings for writing topic ideas is not necessarily age-related, but more related to one's level of writing proficiency. Although some moderately proficient writers also used drawings as catalysts for sparking writing topic ideas, generally these more proficient writers reflected on previously studied writing genres and content-specific units and on personal experiences as sources for their writing topic ideas. The most proficient writers tended to use a wide range of strategies when making writing topic choices, and their writing topics reflected a wide range of selections. Also, the more proficient writer was naturally more of a "risk taker" when experimenting with different strategies for topic ideas, and he/she would be highly creative when working through the process of determining a writing topic. For example, some proficient writers would first combine ideas used in previous writings, and then they would add on to these ideas as a strategy to produce a "new" writing topic idea on which to develop a narrative or some other form of writing (e.g., play, poetry).

IMPLICATIONS FOR INSTRUCTION

In this study, instruction, whether explicit or implicit, was shown to help mold topic selection choices when unassigned. Therefore, teachers play a powerful role when planning instructional strategies that help to promote student independence in making appropriate writing topic selections. First, instruction should promote the use of a wide variety of strategies when making topic selections and, secondly, the learning environment needs to provide a setting that supports the use of these strategies.

When the strategies used by students to make their writing topic selections were explained, several key points emerged. First, the influence of personal experiences on writing topic choices cannot go unnoticed nor be taken for granted. Consistently throughout this study, students reflected on their personal experiences as a powerful source for initiating writing topic ideas. In support of this finding, studies conducted by Graves (1978–81), Bereiter and Scardamalia (1987) and Flower and Hayes (1981a, 1981b) have shown that it is essential to help writers of all ages generate ideas that build upon their personal experiences as they reflect upon their schema. Unfortunately, as obvious as this concept may seem, it is often overlooked in the educational arena.

Another instructional focus found to be effective was one that included the instruction of specific writing genres. In particular, students who had difficulty generating writing ideas and students who were bombarded with too many ideas were found to benefit from this instructional emphasis. When instruction did focus on writing genres, students were shown to reflect on three types of instructional emphases: (a) discussions and examples given by the teacher, (b) practice sheets used to help reinforce writing genre concepts, and (c) the content of literature shared as models. As a result, when genres were taught students tended to automatically narrow their focus of topics they felt to be appropriate when writing in that genre; thus, the genre helped guide the choice of writing topics. Interestingly, but not surprisingly, when the instructional emphasis was on writing as a process, in contrast to writing genres, students wrote more about their personal experiences.

The teaching of content-specific units within the context in which language arts instruction occurred also influenced writing topic choices. With integrated instruction not only was the understanding of content enhanced, student interests were also tapped, stimulating memory searches and encouraging the reflection of one's schema with a subject. As a result, students frequently selected writing topics that were associated with concepts previously learned in social studies and science.

Most importantly, teachers need to be aware that students, given opportunities to use a wide range of strategies to make writing topic choices, become diversified and sophisticated in the strategies they use, over a relatively short period of time. Therefore, "flexibility" and "variety" are important when providing a writing environment to promote use of a wide range of writing topic strategies and to address the needs of students with different levels of writing proficiency. Throughout this study, the investigated context and instructional emphasis varied from one data collection cycle to the next, changing depending upon the needs of the students and the instructional strategies the teacher decided to use. At times the writing instruction emphasized all of the writing components (i.e., mini-lesson, author's chair sharings, and conferencing) typically promoted in a writing workshop setting, and at other times the instruction was highly structured and concepts were taught in a sequential step-by-step fashion. Throughout this study, learning experiences appeared to be cumulative, and not dependent on any one approach to writing instruction.

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EFFECTS OF IMAGERY TRAINING ON THE CREATIVE WRITING OF ACADEMICALLY GIFTED ELEMENTARY STUDENTS

Ellen S. Jampole
SUNY–Cortland

Educators have expressed concern about the influence of a *technocratic* approach to education that views learning as "a search for technical solutions to technical problems" (Egan, 1989, p. 458) with emphasis on acquisition and storage of facts. With a focus on convergent thinking, students are neither taught nor encouraged to reach their full learning potential (Torrance, 1984). In order to address this need to cultivate independent thinkers, this study examined creativity and its enhancement through the use of guided imagery training.

The use of mental imagery has been explored to enhance creativity in learning (Khatena, 1975). By using their own unique experiences, students construct images that diverge from, rather than copy, each other. Although the relationship between imagery and creativity has been examined in various areas, one important area has had little attention: imagery as an aid to creative writing. Here the learner first visualizes stored and/or sensory experiences and then encodes these thoughts into a written form (Plum, 1982). Creativity derives from the ability to retrieve, combine, and synthesize these experiences in original ways; composition is the process of moving from these perceptions to formal prose. This combination defines creativity and originality in personal writing (Flower & Hayes, 1984).

Two previous studies (Jampole, Konopak, & Readence, 1989; Long & Hiebert, 1985) have made initial attempts at using guided imagery to enhance gifted students' creativity in writing. Long and Hiebert (1985) compared subjects receiving three weekly visualization activities to subjects not receiving this instruction. Jampole et al. (1989) compared subjects receiving four imagery training sessions over a 2-week period to subjects not receiving this training. Rather than using visualization activities, the researchers developed descriptive passages, rich with varied types of sensory imagery (e.g., visual, kinesthetic). While generally successful, these attempts have been somewhat limited in scope as to subjects, materials, and procedures. Research implications of both studies have suggested more in-depth investigation take place to support and extend existing findings.

This study further examined the effect of imagery training on the creative writing of gifted elementary students. In contrast to previous research, this investigation: (a) included imagery training, writing practice, and control groups; (b) included stratification by creativity level; (c) included both visual and descriptive passages for instruction and application; (d) extended the number of weekly training sessions to five; and (e) included a delayed posttest a month following the immediate posttest.

METHOD

Subjects

Subjects were 140 academically gifted students in eight self-contained third- and fourth-grade classes in three public elementary schools. All students in this school system's gifted program had to meet one of two criteria: (a) a score of two standard deviations above the mean on an IQ test, or (b) a score of seven on a matrix of verbal and analytical measures. As in previous research (e.g., Long & Hiebert, 1985), grade levels were collapsed to insure a large sample size, eliminating grade level as a factor. Due to absences during one or more of the testing periods, scores of 14 subjects were dropped from data analysis.

Materials

Instructional. For the imagery training group, materials included five training passages. Two visualization activities provided direct imagery instruction. Three passages were researcher-developed stories developed specifically for application of imagery within stories. Additionally, five pictures depicting different settings (e.g., mountains, sand dunes) were used as writing stimuli.

For the writing practice group, materials included five short stories, adapted from two children's anthologies, chosen for their length and interest (e.g., Pandora's Box). Further, none contained highly descriptive passages that would enhance the subjects' use of imagery. The same five pictures selected as writing stimuli for the training group were used for the practice group. For the control group, specific research or library projects were decided by each classroom teacher in consultation with the researcher.

Assessment. Assessment materials for the pretest, immediate posttest, and delayed posttest tasks included three creative writing samples and three pictures as writing stimuli. Writing samples were scored for originality of story elements (adapted from Carlson's, 1965, *Analytical Originality Scale*) and presence of sensory descriptions. The three pictures used as writing stimuli were similar to the pictures used for instruction.

Procedure

The experiment consisted of four assessment and five instruction sessions. Assessment tasks were whole group, administered in all classes by the researcher. Instructional activities were conducted separately in each class by either the researcher or the classroom teacher who were counterbalanced. Control group activities were led by the classroom teacher. After an explanation of the project, the students worked independently.

Pretreatment. In Session 1, all subjects were administered Williams' (1980) Creativity Assessment Packet (CAP). Once identified as high or low creative, subjects were randomly assigned to an imagery training group, a writing practice group, or a control group within each creativity stratification. A week later, in Session 2, all subjects completed the pretest writing sample; they were shown a picture as a writing stimulus, asked to place themselves in the picture, imagine what was happening, and told to write a story based on the picture and their idea of what was occurring.

Imagery treatment and writing practice groups. All sessions for the imagery and writing practice groups were conducted by the classroom teacher or the researcher using prepared materials. Sessions 3–7 were instructional sessions with visualization activities and imagery passages for the imagery group; these included listening to and discussing an activity or passage (20 minutes) and practicing creative writing (25 minutes). The writing practice subjects followed the same procedures as the imagery group, using short stories rather than imagery passages.

Control group. When the other groups received instruction and writing practice in Sessions 3–7, the control subjects were completing either a research project or a book reading activity (45 minutes). This assignment was prearranged with the classroom teacher; each teacher was asked to devise a project that included reading and/or writing activities but that did not emphasize creative writing.

Posttesting. There were two posttesting sessions for all subjects; Session 8 was conducted a week after the last instruction session. Session 9 was conducted a month after Session 8. For both posttest sessions, the subjects were asked to compose a creative writing sample, using a picture as a stimulus.

Scoring. Writing samples were first scored for originality based on an adaptation of Carlson's (1965) scale. To establish reliability in scoring, two reading doctoral students trained in usage of the adapted Carlson scale scored one quarter of all assessment samples. Percentage of agreement was 92%. Differences were resolved through discussion, the remaining samples were divided among the raters and scored. Next, samples were also scored for the presence of sensory descriptions, following the same procedures as described above; percentage of agreement was 90%.

RESULTS

Data analyses examined differences between the three experimental groups on these dependent measures: originality and use of sensory descriptions. Originality was defined by 20 components of writing, categorized into five major areas (e.g., story structure, novel qualities). The seven senses (e.g., tactile, gustatory) were used to identify sensory descriptions in story writing. Separate ANOVAs were performed on each measure, using a 2 (creativity: high/low) × 3 (group: training/writing/control) × 3 (time: pretest/immediate posttest/delayed posttest) design with repeated measures on the third factor. This design includes two between-group factors (creativity and group) and one within-group factor (time).

Originality Analysis

The first analysis assessed differences between groups on originality in story writing. A statistically significant effect was found for creativity level, $F(1, 200) = 14.56$, $p < .0002$; the high creativity group outscored the low creativity group. There were also statistically significant effects for treatment conditions, $F(2, 120) = 5.93$, $p < .004$. Based on post hoc multiple comparison tests, the imagery group significantly outscored both the writing and the control groups (all $ps < .05$). The imagery group's mean was 13.78 ($SD = 5.90$) as compared to the writing group's mean of 11.61 ($SD = 4.53$) and the control group's mean of 11.53 ($SD = 4.52$). In addition, there was a statistically significant interaction found between creativity level and treatments, $F(2, 120) = 3.10$, $p < .05$. The interaction showed that the high creative imagery group outscored all other groups. The high imagery group's mean was 15.71 ($SD = 6.73$) as compared to the low imagery group's mean of 11.57 ($SD = 3.72$), the high writing group's mean of 12.35 ($SD = 4.82$), the low writing group's mean of 10.86 ($SD = 4.09$), the high control group's mean of 11.98 ($SD = 4.13$), and the low control group's mean of 11.10 ($SD = 4.92$).

Sensory Descriptions Analysis

The second analysis was performed to assess differences between groups on the use of sensory descriptions in writing. There was a statistically significant effect for time of task, $F(2, 240) = 20.89$, $p < .0001$, with the imagery group making the greatest gain in usage of sensory descriptions. In addition, there was a statistically significant interaction between time and creativity level, $F(2, 240) = 2.91$, $p < .05$. The interaction showed that while scores were similar on the pretest, the high creative group far outscored the low creative group on the immediate posttest; however, both groups dropped to similar levels on the delayed posttest. On the pretest, the high creative group's mean was 2.84 ($SD = 3.00$), the low creative group's mean was 2.84 ($SD = 2.99$). On the immediate posttest, the high creative group's mean was 4.97 ($SD = 3.69$) while the low creative group's mean was 3.63 ($SD = 1.95$). On the delayed posttest, the high creative group's mean was 2.57 ($SD = 2.23$) and the low creative group's mean was 2.47 ($SD = 2.30$).

DISCUSSION

The purpose of this study was to examine the educational applications of guided imagery upon creativity in third and fourth grade academically gifted classrooms. Several limitations must be taken into account when considering the generalizability of this study: instruction was limited to five sessions, the instructional sessions were relatively brief, and only academically gifted students served as subjects.

Given these limitations, the results of this study indicate that training in using imagery can enhance aspects of gifted elementary students' creativity. These findings support previous research on the effects of imagery (Jampole et al., 1989; Long & Hiebert, 1985), as well as extend these results by addressing important instructional concerns such as students' creativity level and learning over time.

Originality in Writing

Based on the results of this study, guided imagery appears to be an effective strategy to enhance originality in creative writing. Although all experimental groups made some gains across the three testing periods, subjects given imagery training significantly outscored the other two groups. Further, the writing group, with its practice in listening to and writing stories, did not produce more original stories than the control group. This supports the premise that gifted students tend to become less creative as they continue in school and thus need specific instruction to develop their creative abilities (Sisk, 1987). In addition, the high creative subjects produced significantly more original stories than did the low creative subjects. Highly creative learners have the potential to develop their abilities more extensively (Khatena, 1975), as demonstrated by subjects in the present study. Not unexpectedly, a significant interaction between treatment and creativity levels indicated that the high creative imagery group outscored all others.

In examining the subjects' writing for categories of originality, results indicated that, except for style of story, the imagery and writing groups made gains across time and categories, with the imagery group making the greater gains. These categories generally included such elements as: (a) titles and plots (story structure); (b) unusual names, complex punctuation, new words, and picturesque speech (novel qualities); (c) emotional depth (emotional tone); and (d) personal experiences (unusual response).

Use of Sensory Descriptions

In addition to originality, this study also examined the sensory descriptions that subjects used in their own writings. Overall, the number of descriptions used rose significantly from the pretest to the immediate posttest but then dropped significantly from the immediate to the delayed posttest. Of the gains from pretest to immediate posttest, the high creative and imagery groups gained significantly more than the other groups. However, all groups used fewer sensory descriptions on the delayed posttest. It may be that there was not sufficient instruction over time to stimulate the continued usage of sensory descriptions.

When subjects' writing was examined for use of specific sensory descriptions, results were similar to those of Jampole et al. (1989). Of the senses used, visual and kinesthetic appeared most frequently, accounting for over 40% of all descriptions used. This may be partly due to gifted learners' reliance on these senses (Khatena, 1979); in addition, visual and kinesthetic senses may have been emphasized due to the nature of the pictures used and the writing directions given.

Conclusions

It appears that guided imagery is an effective method for influencing aspects of gifted elementary students' creativity. Given five instructional sessions, the imagery group became more original in its writing, and used more sensory descriptions. Instructionally, imagery training could be included as a part of regular class learning, with class discussions of images, modeling by the teacher, guided practice with teacher and student participation, and independent practice by students. Further, students could be encouraged to use imagery as they read, as well as while they write. Future research on guided imagery strategies for enhancing creativity could focus on students in a regular classroom setting, as well as on learning disabled students. Additionally, this research could extend the guided imagery training sessions over a longer period of time.

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DEVELOPMENTAL TRENDS IN CHILDREN'S USE OF PRINT MEDIA: A NATIONAL STUDY

Michael C. McKenna
Georgia Southern University

Dennis J. Kear and Randolph A. Ellsworth
Wichita State University

Two current trends, both in research and in perspective, suggest that reading development is enhanced by exposing children to a wide variety of genres, writing styles, and print media. One trend is the growing appreciation among reading educators for print-rich environments in which wide assortments of printed materials pervade the learning milieu and convey by their very presence the importance of communication through print (e.g., see Altwerger, Edelsky, & Flores, 1987; Shanklin & Rhodes, 1989; Smith, 1988). The second trend is a growing instructional focus on the development of strategic readers, capable of establishing their own purposes for reading and of then selecting and utilizing appropriate strategies for accomplishing those purposes (e.g., see Anderson, Hiebert, Scott, & Wilkerson, 1985; Lipson & Wixson, 1991).

The present study examines proportions of elementary-age students reporting having used various kinds of printed materials during the first half of a school year. The following specific research questions were asked: For each medium, (a) What proportions of students report their use, delineated by grade, gender, and reading ability? (b) Are developmental trends in evidence? and (c) Do such trends differ with respect to gender and ability?

METHOD

Subjects

A national sample of 18,185 children in Grades 1 through 6 was used. To permit broad generalizability, the sample was stratified by gender and ethnicity. The proportion of boys and girls (50.0%) was within 1% of the national proportion, the proportion of Blacks (9.5%) was within 3 percent, and the proportion of Hispanics (6.2%) was within 2% (*Statistical Abstract of the United States*, 1989). In addition, a wide geographical diversity was sought, and the sample included students from 95 school districts in 38 states.

Instrument

Among a series of other survey instruments (used to gather attitudinal data reported elsewhere), a self-reporting checklist was used to determine whether the students had used/read each of six types of print media during the school year. These included comic books, funnies, library books, newspapers, encyclopedias, and magazines. For reasons of reliability, these young subjects were not asked to estimate the extent to which they may have used these materials, but merely whether they had used them at all.

Procedure

Multiple copies of the checklist were sent to all participating teachers, together with instructions for its administration. The instrument was given in group settings during late January, 1989. Teachers began by making clear that there were no "correct" answers. To minimize the possible effects of decoding difficulties, teachers read each checklist item aloud twice as students followed along and marked their responses. Before returning the completed protocols to the investigators, teachers classified each student by gender, ethnic group, and global reading ability (high, average, or low). In considering ability, they were encouraged to use any available data accumulated over the 5 months of their daily interaction with the students.

RESULTS AND DISCUSSION

Proportions were computed at each grade level, delineated further by gender and ability (see Table 1). To compare important pairs of proportions for significant differences, the z statistic was computed (e.g., see Tate, 1965).

Comic Books

The proportion of students reporting having read comic books during the school year rose among boys from .69 in Grade 1 to .75 in Grade 6. This slight increase was significant ($z = 3.2$, $p < .001$). For girls, a significant decline was observed from a proportion of .60 in Grade 1 to .50 in Grade 6 ($z = 4.9$, $p < .001$). This medium appears to be related to developmental gender-based differences. As boys and girls grow older, the former tend to read comics more, the latter less. At all grade levels, greater proportions of low-ability readers reported having read comic books than did high-ability readers. However, these differences were slight and were significant only at Grades 1 and 2 ($z = 2.2$, $p < .05$, $z = 2.1$, $p < .05$, respectively).

Funnies

From Grades 1 to 6, gradually increasing proportions of children reported having read the funnies. This trend was similar for boys (.75 to .87, $z = 7.5$, $p < .001$) and for girls (.71 to .84, $z = 4.3$, $p < .001$). Only at grade level six did the proportions of girls and boys significantly differ ($z = 2.1$, $p < .05$). In contrast, significantly greater proportions of high-ability readers than those of low ability were observed at all six grade levels. Significant developmental trends were in evidence for all three ability

Table 1

Proportions of Children Reporting Having Read or Used Print Media During the First 5 Months of the School Year

	Medium					
Group	Comics	Funnies	Library Books	Newspapers	Encyclopedias	Magazines
Boys						
Grade 1	.69	.75	.96	.63	.52	.75
Grade 2	.68	.78	.96	.56	.57	.75
Grade 3	.72	.83	.95	.58	.59	.79
Grade 4	.72	.83	.93	.64	.59	.79
Grade 5	.75	.83	.92	.68	.64	.83
Grade 6	.75	.87	.87	.74	.62	.88
Girls						
Grade 1	.60	.77	.97	.59	.48	.78
Grade 2	.57	.80	.97	.58	.52	.76
Grade 3	.56	.83	.98	.58	.54	.72
Grade 4	.55	.83	.97	.65	.56	.75
Grade 5	.55	.83	.96	.69	.62	.79
Grade 6	.50	.84	.92	.75	.62	.85
High Ability						
Grade 1	.61	.78	1.00	.58	.49	.76
Grade 2	.61	.82	.98	.59	.57	.77
Grade 3	.65	.86	.99	.63	.60	.75
Grade 4	.63	.86	.96	.68	.62	.79
Grade 5	.65	.88	.98	.77	.71	.84
Grade 6	.63	.89	.92	.82	.74	.90
Average Ability						
Grade 1	.66	.79	.97	.65	.53	.80
Grade 2	.62	.78	.97	.56	.52	.76
Grade 3	.62	.82	.97	.55	.54	.76
Grade 4	.64	.83	.95	.66	.58	.78
Grade 5	.64	.83	.94	.68	.62	.83
Grade 6	.61	.85	.89	.72	.57	.85
Low Ability						
Grade 1	.67	.71	.95	.61	.48	.73
Grade 2	.66	.77	.95	.57	.56	.74
Grade 3	.66	.82	.94	.56	.55	.75
Grade 4	.66	.80	.93	.58	.50	.72
Grade 5	.69	.78	.92	.59	.53	.79
Grade 6	.64	.80	.87	.67	.51	.82

groups. From Grade 1 to Grade 6, high readers moved from .78 to .89 ($z=5.9$, $p<.001$), average readers from .79 to .85 ($z=3.4$, $p<.001$), and low readers from .73 to .80 ($z=2.7$, $p<.01$). Thus, the proportion of students who read the funnies appears to increase with age and to favor better readers regardless of age.

Library Books

The proportion of boys who reported having read a library book from the beginning of the school year until the January survey declined significantly between Grades

1 (.96) and Grade 6 (.87), $z=7.9$, $p<.001$. This decline, however, was not linear, but was clearly associated with the upper elementary grades. (At third grade the proportion was still .95). For girls, a similar pattern was observed. A significant decline occurred between Grades 5 and 6 (from .96 to .92, $z=4.6$, $p<.001$), but no significant differences were observed among the first five grades.

Similar developmental declines were observed for all three ability levels. For high readers, a first-grade proportion of 1.00 dropped to .92 by sixth ($z=7.7$, $p<.001$). For average readers, this drop was from .97 to .89 ($z=6.8$, $p<.001$) whereas for low readers, the first-grade proportion was .95, the sixth was .87 ($z=4.6$, $p<.001$). At every grade level, a significantly greater proportion of high-ability readers reported reading library books than did low-ability readers. Thus, the proportions of students who read library books appears to drop with age irrespective of reading ability, whereas throughout the elementary years significantly greater proportions of high readers tend to read library books than do low readers. It is important to note that although teacher-imposed library check-out requirements may have influenced these results, gender and ability comparisons are unlikely to have been greatly affected since students of both genders and all ability levels were drawn from the same heterogeneous classes.

Newspapers

Expectedly, developmental increases for both girls and boys were observed in newspaper use. The proportion of girls reporting having read the newspaper rose from .59 in Grade 1 to .75 in Grade 6 ($z=8.3$, $p<.001$). For boys, the difference in the first-grade proportion (.63) and the sixth (.74) was likewise significant ($z=5.8$, $p<.001$). At no grade level did the proportion of boys differ significantly from that of girls.

Significant developmental increases were also observed for all three ability groups. The proportion of high readers rose from .58 in Grade 1 to .82 in Grade 6 ($z=10.2$, $p<.001$). For average readers, the increase from .65 to .72 was also significant ($z=3.3$, $p<.001$), as was the rise from .61 to .67 for low-ability readers ($z=2.0$, $p<.05$). For Grades 3 through 6, the proportion of high readers significantly exceeded that of low readers. Interestingly, the proportion of low-ability newspaper readers did not significantly increase from Grade 1 to Grade 5. Thus, the proportion of students who read newspapers appears to rise comparably throughout the elementary grades for boys and girls, but ability-based differences appear to manifest themselves by Grade 3.

Encyclopedias

For boys and girls alike, gradual and significant increases in proportions were observed in the use of encyclopedias. The proportions appeared to plateau at fifth and sixth grades, and at sixth the proportions for boys and for girls were equal (.62). At no grade level did the female proportion exceed that of males, and at each of Grades 1 through 3 the proportion for boys slightly but significantly exceeded that for girls.

Interesting differences in trends were observed with respect to reading ability. A steady rise was observed for high readers, from .49 at Grade 1 to .74 at Grade 6

($z = 10.0$, $p < .001$). For average and poor readers, however, the proportion of encyclopedia users tended to peak and then decline slightly. For average readers, the proportion rose significantly from .53 at Grade 1 to .62 at Grade 5 ($z = 4.2$, $p < .001$) but then fell significantly to a sixth-grade proportion of .57 ($z = 2.5$, $p < .05$). For low readers, no significant increase in proportion was observed, from .48 in Grade 1 to .51 in Grade 6. Although proportions of encyclopedia users tend to increase comparatively with age among boys and girls, desirable steady increases appear to occur only for better readers.

Magazines

The proportion of boys reporting having read magazines during the school year rose from .75 at Grade 1 to .88 at Grade 6 ($z = 8.1$, $p < .001$). The rise for girls from .78 at Grade 1 to .85 at Grade 6, although significant ($z = 4.4$, $p < .001$), was reflected mostly in the increase from fifth grade (.79) to sixth (.85), $z = 4.1$, $p < .001$). Significant developmental increases were also observed for all ability levels. For high readers, the Grade 1 proportion of .76 increased to .90 in Grade 6 ($z = 7.3$, $p < .001$); for average readers a more modest rise from .80 to .85 was significant ($z = 2.9$, $p < .01$); and for poor readers, the gain from .73 to .82 was also significant ($z = 3.5$, $p < .001$). The proportion of students reading magazines thus appears to increase with age irrespective of gender and ability, though the patterns of increases are affected to some degree by these characteristics.

CONCLUSIONS

Although it is encouraging to note the increasing proportions documented here of children who use certain print media, some of the findings are cause for concern. The fact that a third to a half of the children at all elementary grade levels report no use of encyclopedias, the fact that roughly a quarter of first through fourth graders do not read magazines at all, and the fact that the proportion of children reading library books drops significantly with age regardless of gender or ability are unacceptable circumstances. Teachers must be encouraged to (a) make a variety of printed sources, at appropriate readability levels, available to students on an everyday basis; (b) employ teaching strategies that involve children actively in these sources; and (c) monitor the reading habits of their students in order to offer encouragement and suggest alternatives where appropriate.

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THE EFFECT OF ANAPHORA ON THE READING OF GERMAN

Victoria C. Berkemeyer
Ohio State University

The ability to comprehend written information is an essential component of the language learning process for both first and second language readers. To comprehend information accurately, a reader must have precise knowledge of how various linguistic features operate within texts. Linguistic features that have the potential to facilitate or impede the reader's ability to formulate an accurate interpretation of a text are critically important to the comprehension process. When managed correctly these features serve to indicate intersentential connections or, as Huggins and Adams (1980) state, to maximize "the rate of meaning transfer from a language producer to a language receiver" (p. 141). If the reader lacks the requisite knowledge or processing capabilities to interpret these features accurately, however, the connections within the text will become obscured and the reader's comprehension is likely to suffer.

Anaphora is one such linguistic feature capable of influencing comprehension (Webber, 1980). *Anaphora* is defined by Lust (1986) as the relationship between a proform, called an "anaphor" (e.g., "he," "she," or "they"), and another term, called an "antecedent" or "referent" (e.g., "the man," "Maria," or "the dirty dishes"). Lust states that "the interpretation of the anaphor is in some way determined by the interpretation of the antecedent" (p. 9).

Bloom and Hays (1978) offer a broader definition of anaphora by describing it as the "variation in the form of expression used to designate the same concept on first and subsequent sequences within a discourse" (p. 8). Thus, anaphoric expressions allow an author to employ semantic variation when referring to previously named concepts. Through the use of these alternative, but conceptually congruent, expressions, anaphora serves as a means of both cohering texts and reducing the redundancy of language in a discourse context. Wasow (1979) notes, however, that for this reduction process to be successful, "it is necessary that the speaker of a language be able to identify correctly the elements participating in an anaphoric relation and to determine correctly the meaning of the anaphor on the basis of meaning of the antecedent" (p. 2). In using anaphora an author assumes that readers will be able to recognize this reduction and that the intended referent will be accessible to them via the indirect anaphoric expression. Research indicates, however, that this is not always the case.

Early first language studies illustrated that native readers of English have difficulty interpreting anaphora correctly and that this difficulty can impede their comprehension of texts (Bormuth, Manning, Carr, & Pearson, 1970; Haviland & Clark, 1974; Lesgold, 1974; Richek, 1977). More recent research has indicated that anaphoric references are not always problematic for readers and that they may interact with other text variables to influence comprehension (Barnitz, 1980; 1986; Freebody & Anderson, 1983; Roen, 1984; Walker & Yekovich, 1987). Although the effect of this linguistic feature has been investigated for first language readers, the impact of anaphora on foreign language reading is not yet well understood. Foreign language readers are perhaps at greatest risk to misinterpret anaphoric expressions, because they frequently lack sufficient knowledge of the foreign language to make what Webber (1980) calls sophisticated syntactic, semantic, and pragmatic choices among possible referents. In an attempt to determine the anaphoric comprehension abilities of foreign language readers, this study investigated how readers at various levels of baseline German language ability process and comprehend anaphora in authentic German texts.

It is hypothesized that in German identifying the correct referent is especially problematic for the reader, because all nouns belong to gendered categories (masculine, feminine, or neuter) and, therefore, are replaced by gendered pronouns when referred to anaphorically. One such example is the following: "Luise hat eine Bluse. Sie ist sehr groß." [Luise has a blouse. It (She) is very big (tall).] Even a native speaker must tolerate some ambiguity here, because "sie" could refer to either "Luise" or "eine Bluse." Both the discourse context and the topic will presumably assist the native reader in locating the intended antecedent. American readers of German, however, are expected to be influenced by their extensive knowledge of English when interpreting German sentences that contain gendered pronouns. It is anticipated that native readers of English will be more inclined to interpret "sie" as "she" (referring exclusively to "Luise"), because in English inanimate objects like "die Bluse" are rarely denoted anaphorically by gendered pronouns.

By inappropriately applying first language reading skills to German text, native readers of English risk creating a discourse model of the text that is radically different from the one intended by the author. In so doing they jeopardize their capacity to comprehend the text accurately. Research findings by Bernhardt (1986) and Brozovic (1988) suggest that when inexperienced foreign language readers encounter a subsequent sentence in a German text like: "Sie ist ziemlich lang." [It (She?) is fairly long.], they will be more inclined to retain their original interpretation of "sie" as "Luise" than to recognize an important semantic constraint. More competent readers of German, in contrast, will have an easier time identifying "die Bluse" as the only appropriate antecedent for "sie," knowing that it would be extremely unusual to use "lang" to describe a person.

Also misleading for readers is the fact that sentences employing pronouns do not appear to have complex surface structures. Statistical readability formulas predict that a sentence like: "Sie ist groß" is inherently easier to comprehend than a sentence such as "Luises Bluse ist groß" because there are fewer and shorter words (Vacca, 1981). First language studies indicate, however, that sentences that repeat key nouns or noun phrases in a discourse context are more readily comprehensible than sentences that substitute nouns or noun phrases with pronouns (Garnham et al., 1982; Gernsbacher, 1989; Richek, 1977). Second language studies also reveal that a discourse containing longer, more complex sentences is easier to understand than the same discourse containing shorter, less complex sentences (Blau, 1982). Such data clearly illustrate that, even though anaphoric expressions are often shorter than their referents, readers need well-developed processing skills to interpret them correctly.

Webber (1980) concurs with this view in claiming that "antecedents and referents are not explicit and that reasoning is involved in constructing them" (p. 152). These reasoning processes are known as *inferencing rules* and are used by readers to identify the possible set of antecedents for a given anaphoric structure. Webber (1980) further asserts that every anaphoric expression requires that readers employ some inferencing strategies and that if they fail to do this accurately, they "will fail to understand related anaphoric expressions and consequently fail to understand the text" (p. 152). A number of first and second language studies lend support to her contentions (Bormuth et al., 1970; Blau, 1982; Demel, 1987/1988; Haviland & Clark, 1974; Lesgold, 1974; Walker & Yekovich, 1987). More empirical research is needed, however, to determine what processing abilities are required by foreign language learners to comprehend texts with anaphoric forms.

METHOD

Subjects

The subjects in this study consisted of native and American readers of German at various levels of baseline German language ability enrolled at The Ohio State University (OSU). The levels of baseline German language ability ranged from native and highly proficient readers of German to intermediate and novice readers as measured by a standardized German reading test. All participants in the study were paid volunteers, recruited via information flyers distributed in German classes and posted in the German Department. From a total of 85 subjects who participated in the study, valid data were obtained from 54. The high rate of subject loss ($n=31$) was due to several factors that affected the ability of the eye-tracking equipment to track the pupil reliably, such as: extreme head movements, squinting, and excessive blinking. Of the 54 subjects included in the data analysis, 21 were males and 33 were females. Forty-two of the 54 subjects were undergraduate students at OSU and 12 were graduate students.

Materials

To assess each subject's baseline German language ability, all participants in the study took the reading portion of the 1990 National German Examination for High School Students—Level IV prepared by the American Association of Teachers of German (AATG, 1990). The reading portion of this standardized exam consists of 60 discrete-point test items designed to measure students' German language ability on vocabulary, grammar, and reading tasks. The Level IV version of the exam was chosen because it included all of the major grammatical features of the language and provided a comprehensive assessment of subjects' language ability with regard to those features. Subjects' scores on the exam ranged from a perfect score of 60 to a low score of 10.

Two different German texts were selected for this study. The first text, entitled "Der mechanisierte Hof" ["The Mechanized Farmyard"], was a short expository paragraph taken from a German reader (Law, 1964). The second text, entitled "Im Volksgarten" ["In the Park"], was an excerpt from a literary text, also found in a German reader (Kunst, 1977). There were two versions of each text. The first version (the authentic version) contained nouns and noun phrases initially which were subsequently referred to in the text by appropriate anaphoric forms. The second version (the experimental version) contained nouns and noun phrases that were subsequently referred to in the text via the exact same nouns and noun phrases. The text versions differed only in the type of referencing device used: anaphoric forms for the authentic version and the repetition of nouns or noun phrases for the experimental version. The final experimental versions of each text were reviewed for grammatical accuracy and authenticity by two native speakers of German.

Data Collection

Data were collected individually from each subject in the Foreign Language Research Laboratory at The Ohio State University. When subjects arrived they were given the reading portion of the 1990 National German Examination to determine their baseline German language ability. After completing the exam, subjects were randomly assigned to read one version of each text. The subject read the authentic version of one text and the experimental version of the other text. The order of the texts and the text versions were also varied to counterbalance order effects.

Subjects read the text versions on a computer screen while eye-tracking equipment recorded their eye movements. Prior to reading, subjects were told that they would be asked to write down, in their first language, everything they could remember about the text as soon as they finished reading it. Subjects were given as much time as they needed to write their recalls.

A Micromeasurements eye monitor interfaced with an IBM personal computer was used for data collection. This eye-tracking equipment was used to measure the following dependent variables: (a) fixation frequency—the number of times that the eye stops to fixate when reading the text; (b) average fixation duration—the average time per fixation, measured in milliseconds; and (c) total fixation duration—the total amount of time the eye spends fixating on the text, measured in seconds.

To determine what information subjects had understood about the text, the dependent variable of reading comprehension was assessed via immediate written recall protocols. This measure of reading comprehension was chosen because it is considered a direct reflection of what the reader has actually processed and understood about the text (Bernhardt & James, 1987). Recalls were written in the subject's native language (either English or German) to avoid the confounding effects of a second language (Lee, 1986).

A weighted propositional scoring system was developed for each text according to the procedure described by Bernhardt (1988). All the recall protocols were scored twice by the researcher. Intrarater and interrater reliabilities were established via Pearson product moment correlations. For both Text 1 ("Der mechanisierte Hof") and for Text 2 ("Im Volksgarten") the intrarater reliability correlation was .99. The correlation between the researcher's scores and the scores of a native speaker trained to use the scoring instruments was .98 for Text 1 and .99 for Text 2.

Data Analysis

The data were analyzed using Analysis of Covariance (ANCOVA). Baseline German language ability was entered as the covariate. Text and type of referencing device were treated as fixed categorical independent variables. Treating text as a fixed independent variable was considered valid because the texts were not randomly selected but specifically chosen on the basis of their anaphoric content. Dependent variables for all of the ANCOVA tests were recall score, fixation frequency, average fixation duration, and total fixation duration.

RESULTS AND DISCUSSION

Research Model

A 2 × 2 (text × type of referencing device) ANCOVA was run separately for each dependent variable to test the following model. This model attempted to account for all possible sources of variability in the subjects' dependent measures:

$$Y_{ijk} = S_i + \mu + \delta_j + \beta_k + \delta\beta_{jk} + \Delta_1 X_i + \Delta_2 X_i(I) + \Sigma_{ijk}$$

where Y_{ijk} = the dependent measure, S_i = the subject effect, μ = the constant or intercept, δ_j = the text effect, β_k = the type of referencing device effect, $\delta\beta_{jk}$ = the text × type of referencing device interaction, $\Delta_1 X_i$ = the baseline German language ability effect (the covariate), $\Delta_2 X_i(I)$ = the baseline German language ability effect when no anaphora is present (a means of including the baseline × type of referencing device interaction where (I) is an indicator variable that is 0 when anaphora is present and 1 when anaphora is not present), and Σ_{ijk} = the error variance.

ANCOVA Test Results

The results of the ANCOVA test, using recall score as the dependent variable, are shown in Table 1. These findings show the covariate, baseline, and the independent variable, text, as having highly significant main effects. In contrast, type of referencing device and the text × type of referencing device interaction had nonsignificant effects. In other words, the greatest predictors of subjects' recall scores were which text they read and their baseline German language ability.

Previous research indicates that comprehension scores should increase in texts where anaphoric expressions have been replaced with appropriate nouns or noun phrases, because there is no chance to misinterpret what may be an ambiguous anaphoric expression. This increase in comprehension is expected to be the most dramatic for subjects with low baseline language ability according to first language research (Richek, 1977). The presence or absence of anaphora in the texts studied, however, was not a significant indicator of how well subjects could recall the text. Nor was

Table 1

ANCOVA Table for Recall

Source	*F*	*df*	*p*
Covariates	29.74	(2, 102)	0.0000
Constant	4.94	(1, 102)	0.0285
Text	126.66	(1, 102)	0.0000
Referencing Device	0.87	(1, 102)	0.3533
Text × Referencing Device	0.01	(1, 102)	0.9413

there a significant interaction between subjects' baseline German language ability and the type of referencing device that appeared in the text version they read.

Despite these nonsignificant findings, a review of the predicted means for each text version in Table 2 does indicate that anaphora can influence the comprehension process. The means predicted by the model reveal that regardless of the text read, subjects' predicted recall scores are higher for text versions that use nouns in the place of anaphoric expressions. Although the increases are not statistically significant, the inclusion of nouns does seem to assist readers in getting more information from the text than they otherwise would.

The ANCOVA tests performed for the three dependent variables measured by the eye-tracking equipment (fixation frequency, average fixation duration, and total fixation duration) produced results similar to those obtained for the dependent measure of recall. A significant main effect was obtained in the case of all three dependent variables for the covariate, baseline German language ability, $F(2, 102)=6.34$, $p<.003$ for fixation frequency; $F(2, 102)=4.88$, $p<.01$ for average fixation duration; and $F(2, 102)=11.61$, $p<.0001$ for total fixation duration. A significant main effect was also found in all three cases for the independent variable of text, $F(1, 102)=21.34$, $p<.0001$ for fixation frequency; $F(1, 102)=7.61$, $p<.007$ for average fixation duration; and $F(1, 102)=33.90$, $p<.0001$ for total fixation duration. The effects for type of referencing device and text × type of referencing device interaction were both nonsignificant for these three dependent measures. The interaction between baseline German language ability and type of referencing device was also nonsignificant. Similar to the dependent variable of recall, the subjects' baseline German language ability and the text they read were the greatest predictors of their eye fixation patterns.

Table 2

Predicted Cell Means for Recall

Text Version	Predicted *M*	*SD*
Text 1 with anaphora	35.8485	4.6592
Text 1 with no anaphora	42.2082	4.3982
Text 2 with anaphora	63.0559	4.3982
Text 2 with no anaphora	68.8049	4.6592

It was expected that the presence of anaphora in texts would increase the subjects' fixation frequencies, their average fixation durations, and their total fixation durations, because the subjects would require additional processing time to identify the appropriate referents for the anaphoric expressions. The results to the ANCOVA tests, however, do not support these expectations. The presence or absence of anaphoric expressions in the text did not significantly affect subjects' fixation practices. Moreover, unlike the results for the dependent measure of recall, no consistent fixation patterns emerged from the data for these three variables even in spite of the nonsignificant findings.

CONCLUSIONS

The Effect of Anaphora on Reading Comprehension in German

This study reveals that subjects did not differ significantly in their performance on text versions with or without anaphora as measured by any one of the four dependent variables. These findings provide strong support for those who argue for the use of authentic and unaltered texts in language instruction (Bernhardt, 1986; Swaffer, 1985). Manipulating texts by replacing anaphoric expressions with repeated nouns and noun phrases does not significantly benefit comprehension. In fact, subjects proved to be quite capable of correctly interpreting gendered pronouns in authentic German texts.

Despite the nonsignificant findings, the linguistic feature of anaphora may still play an important role in the comprehension of German text. Recall scores did improve, albeit nonsignificantly, when anaphora was replaced in the text with unambiguous nouns and noun phrases. This replacement seems to clarify the meaning for readers and allows them to comprehend more of the text. An increase in comprehension, however slight, may be especially critical for poor comprehenders who are ordinarily unable to get much information from texts.

In addition, it is possible that the limited length of the texts used in this study (approximately 100 words) may not have been long enough to determine the comprehensive effects of anaphora in German. A longer text may allow anaphora to operate more completely and naturally as a discourse phenomenon. Therefore, additional research needs to investigate the influence anaphora may have on readers' comprehension of longer German texts.

The Importance of Multiple Texts

The results of this study reinforce the need for reading studies in which a minimum of two texts are used for data collection. Subjects were able to recall less of Text 1, an expository text, yet needed a much higher number of fixations to get through the text. Text 2, a literary text, was much easier for subjects to comprehend, yet they allocated less total fixation time to that task. It is possible that these texts may not have been particularly "typical" or "representative" of their genre. But it seems that this criticism could be leveled against almost any text. When more than one text is used in reading studies, the notion of "typical" or "representative" need not become a critical issue.

That one text was easier for subjects to understand than the other also illustrates that not all texts are equal. Using only one text in studies can cause researchers to distort the results and draw inaccurate conclusions. When multiple texts are included in reading studies, however, the findings are less likely to be exaggerated and the generalizability of those findings is greatly enhanced.

The Impact of Baseline Language Ability on Reading Comprehension

It was fully expected that subjects' baseline German language skills would be an important predictor of their recall and fixation scores for a German text. It was not expected, however, that their baseline ability would be a much more important predictor of their scores than would be the removal of anaphora from the text. The findings reveal that it is not merely subjects' ability to handle individual microlevel linguistic features, such as anaphora, that impacts their comprehension, but rather their ability to use several macrolevel language skills together—skills such as vocabulary and grammar.

These research results contradict the findings of many second language studies and popular opinion, which hold that if students are provided with one appropriate tool, like a knowledge of text structure, background knowledge, or a simplified text, their comprehension will improve. In this study, the "one appropriate tool," a manipulated text, did not significantly increase comprehension. Studies such as this one are still needed to determine if specific microlevel language features, like anaphora, affect comprehension. However, research that investigates several linguistic features operating in conjunction at a macrolevel may indeed prove to explain more about what impacts the comprehension process.

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IMPLEMENTING WHOLE-LANGUAGE LEARNING: ADULT LITERACY TEACHERS' PROBLEMS AND CONCERNS

Nancy D. Padak and Denise Stuart
Kent State University

Jane Schierloh
Project: LEARN, Cleveland

Adult literacy teachers come from diverse backgrounds (Cranney, 1983). For the most part, although sincerely interested in assisting adult learners, they are untrained as adult literacy providers (Chall, Heron, & Hilferty, 1987; Kazemek, 1988) and may have narrow, skills-based notions of reading and writing (Keefe & Meyer, 1985). As Chall et al. (1987, p. 193) note, "Every major published report on adult literacy cites the problem of part-time, often untrained . . . staff members."

These qualities affect the nature of adult literacy programs. Too frequently, programs lack a functional focus. Instruction is often geared toward reading and writing in isolation (Meyer & Keefe, 1988), which causes many adult learners to view literacy as "fragmented, confusing, and meaningless" (Davidson & Wheat, 1989; Kazemek, 1988). Whole-language principles and practices (e.g., Goodman, 1989; Watson, 1989), on the other hand, emphasize the learner's experiential and linguistic strengths, maintain high levels of interest, and focus on matters of immediate and functional concern to learners in a context that capitalizes on the meaningful and social nature of literacy and learning (Davidson & Wheat, 1989; Kazemek, 1988; Padak & Padak, 1987).

Thus, effective staff development programs for adult basic education (ABE) providers are needed (Kazemek, 1988). Staff development that focuses on whole-language principles and practices and that provides support as teachers implement change may address this need. Support must include attention to teachers' problems and concerns, which, given the complexity of the shift toward whole-language teaching and learning, are likely to be substantial (Padak & Nelson, 1990; Short & Burke, 1989).

Descriptions of the processes through which adult literacy teachers implement whole-language principles and practices may inform efforts to create and implement effective ABE staff development programs. This study was designed to explore several aspects of these processes. Case studies (cf. Merriam, 1988; Yin, 1984) of five ABE teachers' efforts to implement whole-language practices in their respective programs were developed. Three questions were addressed: What are adult literacy teachers' problems and concerns during the process of implementing whole-language learning?

How do teachers attempt to solve these problems? How do problems and concerns change over time?

METHOD

Setting and Informants

A 5-month, state-funded staff development program provided the context for this study. Based on related research (e.g., Bean & Johnson, 1987; Goodman & Goodman, 1981; Wood & Wood, 1986) and discussions with state-level ABE consultants and local practitioners, the program had two major goals: (a) to develop teachers' understanding of whole language principles and practices, and (b) to facilitate teachers' efforts to apply such understandings to their own ABE settings. Key features of the program included (a) 4-day-long sessions (2 months apart) for sharing principles and demonstrating instructional activities appropriate for mid-level adult learners, that is, those who are beyond beginning literacy instruction but not yet in GED preparation programs; (b) opportunities for participants to use whole-language activities in their own settings; and (c) informal sharing sessions related to implementation.

Teachers were nominated for participation in the program by their local ABE directors. Five teachers from the larger group of 26 volunteered to serve as informants for the study. These five teachers represented different levels of experience within ABE and taught in a variety of types of programs; thus, they seemed representative cases for the purposes of the study. General information about the five teachers and their programs is provided in Table 1.

Data Sources and Analysis

Data for the study were gathered primarily from monthly, individual interviews with participants. Periodic observations of participants' ABE instruction constituted a secondary data source (see Table 1). Interviews and observations were conducted by two trained research assistants who had also attended all the staff development sessions. One assistant gathered data for two cases, and the other for three.

The semi-structured interviews focused on teachers' attempts at implementing whole-language practices, problems or concerns related to implementation, and attempts at solving identified problems. All interviews were tape recorded and later transcribed. The "observer as participant" role (Junker, 1960) guided observations. Observers kept written field notes detailing teacher and adult learner activities during ABE instructional sessions.

The researchers collaborated in the data reduction and analysis process. The process first involved identifying data congruent with the research goals (Guba & Lincoln, 1981), for example, portions of interviews or field notes related to problems, concerns, or solutions. Data sets or case records (Patton, 1980) were then created for each teacher. These were combed for patterns and regularities (Goetz & LeCompte, 1984; Lincoln & Guba, 1985). Inductive analysis uncovered tentative categories of concerns and problems, which were refined through the constant-comparative method (Glaser & Strauss, 1967). Categories were then considered in light of the literacy

Table 1

Information About Case Study Teachers

	Mary	Jane	Cathy	Diane	Edith
Experience in ABE (other)	10 yrs. (15 yrs., elem.)	3 yrs.	3 yrs. (5 yrs., HS & Coll. English)	22 yrs. (7 yrs., College English)	9 yrs. (9 yrs., 6–8 LD)
Highest degree	M.S. Ed.	B.S. (Social Studies)	M.A. (currently in Ph.D. program)	B.A.	B.S. Ed.
Location of Program	semi-rural, vocational school	mid-sized city	urban	urban	suburban
Type of Program	ABE/GED; 90% indiv., 10% small group	ABE/GED; 90% indiv., 10% small group	family life; 10% indiv., 30% small group; 60% large group	ABE/GED; 85% indiv., 10% small group; 5% whole group	ABE/GED; 85% indiv., 10% small group; 5% large group
Number (hrs.) of Observations	6 (15 hrs.)	6 (10 hrs.)	4 (7 hrs.)	6 (8 hrs.)	7 (13 hrs.)
Number of Interviews	5	4	4	5	4

learning events which comprised the case records. Finally, a cross-case analysis was conducted to identify general themes related to the focus of the study.

Three procedures were used to establish the trustworthiness and plausibility of findings. Teachers' reports of instructional situations were checked against field notes from observations. In addition, the researchers completed each stage of data reduction and analysis independently and then collaborated to share insights and, if necessary, resolve discrepancies. Both these forms of triangulation served to enhance the trustworthiness of findings (Mathison, 1988). Member checks (Merriam, 1988) were conducted at the conclusion of data analysis to establish that findings were plausible from participants' perspectives.

FINDINGS

Data analysis yielded five general categories of reported problems/concerns related to the implementation of whole-language teaching practices. Examination of expressed problems over the 5-month period revealed no changes. Each category is described and defined below, along with solutions that teachers attempted or speculated upon.

The first category, facilities and supplies, represented concrete problems for two teachers. One had no access to a chalkboard, tables, or desks; she solved this problem by bringing "in a lot of scrap paper." Another had no access to a copy machine.

Program Structure and Organization

A second category of problems and concerns related to the overall organization or structure of existing ABE programs. Learner attendance was a major issue within this category. Two teachers believed that they had too few learners to sustain conversations and discussions about reading and writing; the others had difficulty because they had so many learners. In all cases, observations corroborated these perceptions. Edith and Diane believed that training for volunteers would alleviate the pressure they felt to attend to all learners' needs. Edith invited volunteers to join group discussions about reading and writing as a means of informal training. Jane said, "I just sort of fly by the seat of my pants, just finding time whenever I can."

In two programs, learners frequently arrived and left at different times, which complicated small group interaction. This, too, was corroborated through observation. The problem was compounded by program policies that encouraged learners to decide for themselves how instruction should be focused. Learners in both programs would occasionally decide to spend all their time with math instruction. Neither teacher addressed this problem during the course of the study.

All five teachers believed that learners' inconsistent attendance caused difficulty sustaining instruction: "[Whole-language practices are] effective if you can have the same group over and over again and sort of follow them . . . they're not doing it for the first time every night . . . consistency in the group and consistency in the techniques, in the subject matter . . . . But in this program . . . this coming and going all the time just isn't conducive to effective teaching" (Mary). Edith expressed the concern this way: "it would be nice if I had the whole group working together . . . we start a particular thing on Tuesday. The following Tuesday or even Thursday it doesn't mean that the same people are going to be there. So that's a problem . . . ." Teachers attempted to address this problem by planning sessions that could stand alone as well as contribute to a larger plan.

In three programs with open entry policies, teachers were interrupted when new learners entered programs, sometimes for registration and intake procedures and sometimes to welcome new learners and get them started with instruction. Although interruptions caused instructional problems for the teachers, none attempted to change this aspect of program organization.

Instruction

Problems and concerns related to the shift from individualized instruction in skill workbooks (used in four of the five programs; see Table 1) toward the more interactive instructional routines characteristic of whole-language practices constituted the third category. The three who viewed whole-language practices as an addition rather than a potential replacement for past practices expressed concern about finding time to implement new teaching/learning strategies: "and it seems like sometimes we run out of time on certain nights . . . there might be five students that come in all at once and all of them need something different" (Mary).

Jane expressed the only curriculum-related concern during the course of the study: "How do I introduce grammar problems" in a writer's workshop? She decided to encourage peer editing, but found that learners were "too nice to each other." She attempted to solve this problem through modeling: "critiquing somebody else's paper and showing them how it can be done without hurting feelings, which I know they're afraid to do."

Three teachers commented on changes in their own instructional roles. For Edith, the change was positive: "I didn't think I had the privilege of taking this much time with a group." Cathy worked to reduce what she perceived to be her own verbal domination of discussions: "I believe that it should come from them, but I didn't always do it that way, particularly in the beginning . . . . I am so conscientious that it's not necessarily going to stick if they don't participate in it, so I start out by saying, 'What do you think?' So I do that more often . . . . I think I've discovered that I do a lot less talking." Mary was concerned about evaluating instruction: "[it was] hard for me to evaluate what the students were getting because there was the discussion . . . I didn't want to intimidate . . . I wish I knew more of what the interchange was . . . I wanted to be more a part of the group . . . I tried to listen and look at faces, but I couldn't hear all the answers and all the things that were happening."

Teachers perceived that learners, too, were adjusting to whole-language practices. Edith noted that some learners did not know how to work in groups or how to discuss without arguing. Jane expressed concern about learner comfort, as well: "[some learners are] not very comfortable at all. I can see them loosening up a little bit, but this is three weeks now that I've been working with [them]." Both teachers attempted to resolve this problem by talking with learners. Jane said, "I don't pressure them; that's their decision to [join the group] . . . I try to reassure them that . . . we understand it's different; it's something they're not used to doing, but if they just bear with me that I think they will get to the point that they will actually enjoy it, and some have already . . . ."

Teacher-Based Factors

The fourth category represented teacher-based factors that presented problems. Several, for example, lamented their lack of planning time, which none had: "I really have not had the time available to me to sit down and plan . . . looking for the interesting articles and stories and then . . . deciding what strategy to use" (Jane).

Availability of materials caused problems for three teachers. In particular, they were concerned about finding interesting materials that learners could read successfully. All three had used conventional ABE material in the past, which they had found lacking. Still, the process of selecting alternative reading material was new, and they expressed some concern about the appropriateness of their choices. To address this problem, the teachers searched their personal libraries, surveyed magazines and newspapers, contacted colleagues, and created mechanisms for sharing good materials with each other.

Teachers' beliefs about the success of their previous programs affected their willingness to consider changes. "If it's not broken, why fix it?" was Diane's attitude: "The bottom line is retaining students . . . our attendance has been excellent—and people don't come if they don't get anything." Of the five, Diane made the fewest observable changes in her existing program. Jane made the most whole-language-oriented changes. She described herself as having "basically an empty mind, willing to accept just about anything. You know, could you please help me work with adults better?" Jane evaluated the impact of her instructional changes on learners, as well: "I could see the value of working this way . . . I have seen, yes, it does actually work as well as I was led to believe in the workshops."

Edith and Mary were more equivocal in their attitudes and their implementation. They had judged the worth of their programs by learner success with the GED (Edith) or "all these numbers and figures that we were sending to the state" (Mary). Finding alternatives energized Edith: "because I'm more motivated, I can feel the difference . . . rather than saying, 'Well, come on guys, we've got to learn this because the test says that.' " Mary's reaction was discomfort: "It even feels uncomfortable any more to teach . . . the way I taught . . . but none of the [other] tactics feels comfortable as yet." Thus, teachers' attitudes about their previous programs influenced their implementation of whole-language practices and contributed to their concerns.

Learners' Needs and Goals

Teachers' perceptions of learners' needs and goals comprised the final category. Two believed that learners preferred math instruction to language arts instruction, particularly writing. Edith solved this problem by letting "them do that for a couple of weeks. And then I say, 'You know, there's other parts that we have to get involved in.' " Jane solved the problem by alternating sessions between math and language arts.

Three teachers found learners' ideas about their own literacy needs problematic. Diane believed that learners were satisfied with her individualized program. Cathy believed that learners attended her family life program to focus on parenting, so she encouraged functional literacy use within that context. For example, learners read, discussed, and wrote their own versions of children's trade books.

Mary described what she believed to be her learners' concerns in this manner: "One thing about this whole language that frightens me a little bit, is that I keep thinking we're going to lose a lot of students, because they're going to . . . think, 'Well, this isn't what I'm here for. I'm here for this GED, and I want to know that this is going to be on the GED test and that this is something that is really going to help me pass that test. Because I have this immediate goal . . .' they want to know how to use commas and semi-colons and colons . . . . And I know that this whole language doesn't say that you don't teach the skills, but I don't know if it teaches as fast as they want it or something." Although she spoke of this concern during each interview, she did not resolve it. She did, however, speculate on the advantages of creating a voluntary "reading and writing" class for learners who were not so GED-driven, in the hopes that learners' enthusiasm would "spread."

CONCLUSIONS

Changing orientations toward teaching and learning is a complex, time-consuming process (Rogers, 1983). Some of the concerns and implementation difficulties uncovered may reflect the relatively short (5-month) duration of the study. Still, concerns from one category were often related to concerns from other categories. Examination of these relationships, particularly in light of the case records developed for each teacher, yielded several themes or issues related to the process of implementing whole-language practices in these ABE programs.

Several aspects of policy-level decisions about the nature of ABE programming impeded change toward whole language practices. Teachers reported inappropriate facilities and lack of access to supplies and interesting, authentic materials. Further, they had no preparation time. Under these conditions, their efforts to shift toward whole language practices were often frustrated.

Policy-level decisions about program structure also presented problems. Open entry programs which encourage "dropping in" any time may be very convenient for learners, but these same features caused problems for teachers who wanted to establish and maintain discussion groups for reading and writing. The teachers felt little control over any of these policy-level issues, which became barriers to implementation from their perspectives.

Another conclusion from this study relates to instructional routines. The routine in conventional ABE programs has teachers making and grading assignments in skills workbooks and learners completing assignments individually. In general, teachers expressed the most problems in areas that represented the biggest shifts from this routine: locating authentic, interesting, and appropriate materials; learning to facilitate learning without controlling it; helping learners adjust to discussions about reading and writing. For these teachers and their learners, the shift toward whole language practices involved reconceptualizing their roles within instruction, which was a lengthy and sometimes problem-ridden process.

A third broad theme arising from the results centers on teachers' acceptance of the philosophy underlying the instructional change. Diane believed that her program met learners' needs, although her criterion was retention rather than learning, and so was reluctant to change. Mary's equivocation about the impact of change on learners' attendance and feelings of goal attainment led her to supplement her program with whole-language activities rather than supplanting previous practices. This, in turn, led to concerns about having enough time to accomplish all her goals. Her uncertainty may also have contributed to her discomfort with both her previous ways of teaching and the alternatives she had learned about.

Cathy, Edith, and Jane expressed acceptance of whole-language principles and actively implemented whole-language practices. Each became more certain about the decision to change as they evaluated instruction. In some way, all five teachers considered both their own beliefs about literacy instruction and their perceptions of learners' needs and goals to make decisions about instruction. Those whose beliefs were most congruent with whole-language philosophy and who saw positive changes in learners were most likely to implement change (Rogers, 1983; Spector, 1984).

One purpose of this study was to inform efforts to create and implement effective staff development programs for adult literacy teachers. The results suggest several guidelines toward that end. First, program directors or policy makers should be involved in staff development efforts, so that they understand and can help eliminate barriers to implementation. Second, the shift toward whole-language practices may involve changes in some aspects of program structure or support for teachers. Finally, any change as complex as the one studied here should be accompanied by long-term support for teachers that reflects understanding of their concerns, as well as their needs.

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LOOKING AND SEEING: CONSTRUCTING LITERACY LEARNING IN ADULTHOOD

Susan L. Lytle and Katherine Schultz
University of Pennsylvania

As a cultural phenomenon literacy often seems to entail labeling. Even as toddlers and preschoolers, children begin to be identified as early readers and late bloomers. When entering school they are frequently sorted into groups according to literacy performance or apparent readiness to perform, with the group names or labels identifying abilities according to local or national standards. Layered on top of these groupings are terms which often signify, but do not make explicit reference to race and class, and include adjectives such as *disadvantaged* and more recently *at-risk*. Another set of descriptors is used for adults who for a variety of reasons may not participate in traditional ways in the literacy activities of society. Including labels such as *illiterate, functionally literate, marginally literate, low-literate* or even *sub-literate*, these terms not only conjure up dire images of masses of people and grievous social problems, but they also mask the considerable range and diversity of abilities discernible in the people behind the labels, shaping the ways we see and obscuring, perhaps making invisible, what is outside of the viewers' perspective.

In a series of essays entitled *Ways of Seeing*, Berger (1977) uses the history of art as a template on which to explore cultural practices connecting words and images. Berger writes:

> We see only what we look at. To look is an act of choice. As a result of this act, what we see is brought within our reach—though not necessarily within arm's reach. To touch something is to situate oneself in relation to it. (Close you eyes, move round the room and notice how the faculty of touch is like a static, limited form of sight). We never look at just one thing; we are always looking at the relation between things and ourselves. Our vision is continually active, continually moving, continually holding things in a circle around itself, constituting what is present to us as we are. (p. 8–9)

Since the advent of the printing press divided communities with access to the mass production of printed material into literate and illiterate, those who seemingly did not possess the skills with which to decode written materials have been marginalized and *seen* as somehow lesser or inferior, somehow *other* than those who consider themselves readers and writers. Studies of the functions and uses of literacy in different cultural contexts, however, reveal differences in literacy practices which do not correspond simply to skilled or schooled literacy (Heath, 1983; Reder & Green, 1985; Scribner & Cole, 1981; Taylor & Dorsey-Gaines, 1988), but which instead posit a notion of a plurality of literacies and hence a radically different way of "seeing" adults who come to literacy programs.

A "literacy as practice" perspective suggests that adult literacy researchers and practitioners explore new ways of looking at literacy *with* adults, so that both research and practice become more participatory. We need to find ways to comprehend more fully and with a critical perspective adult learners' own images, practices, plans, and perceptions of literacy and language processes. In this paper we argue that the labels we choose or ways of looking we adopt shape the perceptions of not only practitioners and researchers, but of adult learners themselves. Describing a model based on competence rather than deficiency and on a broad rather than a narrow definition of literacy (or more accurately literacies), we propose a conceptual framework for inquiring into the multiple facets of literacy development in adulthood. The framework not only invites us to investigate literacy as a complex phenomenon, but to do so with adults whose perspectives are essential to our understanding. As we will demonstrate, using the framework uncovers issues in interpreting data that argue a need for altered relationships between the researcher and the researched.

The conceptual framework for adult literacy development has evolved from an empirical study of participatory assessment called The Adult Literacy Evaluation Project (ALEP), a 5-year collaborative effort between researchers and practitioners at the University of Pennsylvania and the Center for Literacy, an urban agency providing literacy education to a large number of adults in the Philadelphia area (Lytle, in press; Lytle, Marmor, & Penner, 1986). After describing briefly the literature which informs this framework for inquiry and the framework itself, we focus on some of the complexities entailed in using this "way of looking." Using documentation from ALEP, we raise questions about how researchers and practitioners approach the study and teaching of adults and, in particular, about the role adults themselves may play in constructing a more accurate and compelling picture of literacy learning in adulthood.

ASSUMPTIONS ABOUT LEARNERS, LITERACY PRACTICES AND LEARNING

A conceptual framework for literacy development in adulthood is necessarily built on a set of assumptions about adults as learners, about the nature of literacy, and about what counts as learning in adult literacy programs. The following is an abbreviated synopsis of 10 perspectives taken from a review of the current literature which, together with our work with adult learners inside literacy programs, informed the construction of this framework.

1. There is considerable evidence that the commonplace images of incompetency and marginalization of adults who are weak and embarrassed do not match the adults who actually come to literacy programs, bringing with them self-concepts, interests, and literacy abilities as varied as those of any group in the population (Fingeret, 1989; Lytle, Marmor, & Penner, 1986; Smith-Burke, Parker, & Deegan, 1987).
2. Adults often operate within complex social networks, offering skills of their own in exchange for the literacy skills of others within their network (Fingeret, 1983).

3. Many so-called "illiterate" or "low-literate" adults develop literacy spontaneously, outside of formal programs, by working collaboratively to accomplish a range of tasks (e.g., Fingeret, 1989; Heath, 1983; Reder, 1987; Reder & Green, 1985; Scribner & Cole, 1981).
4. There is a need to look for literacy and learning in a wide range of contexts including families, workplaces, unions, stores, churches, community organizations, etc. (Brookfield, 1984).
5. Becoming more literate is not necessarily characterized by increased autonomy. Instead, there are diverse routes into literacy, and in different cultures or social groupings these paths may revolve more around joint work and interdependence than individual initiative (Reder, 1987; Brookfield, 1986).
6. Literacy practices differ from group to group within a society as well as from society to society (Heath, 1983; Phillips, 1972; Reder, 1987; Scribner & Cole, 1981; Street, 1984; Taylor & Dorsey-Gaines, 1988).
7. Individuals can be expected to vary greatly in their purposes for reading and writing, in the texts they choose to read and write, as well as in the contexts for performance of reading and writing abilities (Beach & Hynds, 1990; Bloome & Green, 1984; Cook-Gumperz, 1986; Johnston, 1985; Lytle, Marmor, & Penner, 1986; Lytle & Schultz, 1990).
8. Literacy can be viewed as a process of interpreting the world and developing a consciousness of values, behaviors and beliefs as socially and culturally constructed (Freire, 1983; Freire & Macedo, 1987; Giroux, 1983).
9. Literacy programs differ dramatically from each other. There are often striking dissimilarities within programs as well, as teachers and tutors bring their own prior knowledge, assumptions and expectations about literacy and learning (Auerbach, 1989; Fingeret, 1984; Lytle & Wolfe, 1989).
10. Programs referred to as "participatory" provide opportunities for developing literacy within the program as an organizational as well as an instructional setting, and thus regard adults' prior experience and established patterns of social interaction, often in oral subcultures, as contexts and resources for learning (Fingeret & Jurmo, 1989).

A CONCEPTUAL FRAMEWORK FOR EXPLORING LITERACY DEVELOPMENT

Drawing on these perspectives from the literature and our work with adult literacy learners, we have posited a framework which currently involves four interrelated dimensions of literacy development over time (Lytle, in press). The term dimension is derived from two words meaning "apart" and "measure," suggesting that the original orientation of the word was to the measurement of pieces or parts of some whole (Webster, 1981). Its primary lexical definition refers to linear measurements including width, length or thickness, extent or size, whereas in literary usage, dimension may refer to character's lifelike or realistic quality—as in a fully dimensioned character and, in a particular work, to a largeness of thought. More modern usage of the word indicates both a specific factor (a single dimension) and a larger picture (social dimension). In our framework, then, we use this term to signify at once the part and the whole, so that dimensions of literacy development are neither components nor continua, rather more like complex interacting planes in time and space.

Our conceptual framework, "Dimensions of Literacy Development," is intended to be a heuristic for inquiry into the cultural scripts adults bring to and take from learning, their family, school and community histories, their specific and global intentions, their successful experiences learning and teaching in other facets of their lives, their knowledge of the world, and, in particular, their tacit and evolving awareness of the forms and functions of written language, as experienced in the contexts of daily life. In Table 1 we provide an overview of each of the four dimensions: adults' beliefs, practices, processes, and goals or plans. As we have explored these aspects of literacy with adults, both to uncover their meanings and to determine their usefulness, we are increasingly aware of ways the dimensions themselves overlap and are interrelated, as well as the considerable intra-individual as well as the inter-individual differences in adults participating in urban literacy programs.

Our first dimension, *beliefs*, includes adults' theories or knowledge about language, literacy, teaching and learning. The labels adults have worn as students and as family and community members, as well as the beliefs passed on either explicitly or implicitly, contribute to the assumptions and powerful images adults carry with them about themselves as learners and about the more general processes of learning, reading, and writing. This aspect of literacy development foregrounds adults' prior experiences, attitudes, and current understandings of: their own social, cognitive, and linguistic resources for learning and of themselves as gendered, raced, and classed readers, writers, and learners; the forms and functions of written and oral language; the nature of reading and writing processes in relation to different tasks, texts and contexts; and of the ways that writing and reading are or should be taught and learned. If adults are initially viewed as possessing theories about reading and writing, teaching and learning, changes or elaborations in these beliefs both constitute a crucial aspect of development and relate directly to literacy learning in each of the other dimensions.

Our second dimension of adult development is literacy *practices*, the range and variation of literacy activities engaged in by adult learners in their everyday lives. In our highly technological modern society, all adults have a range of literacy practices, whether or not they (or we) label them as "literate." When we document these practices with adult learners at the beginning of a program, we establish a baseline for looking over time at development as a function of both individual and collective changes in practices. These changes might be measured in terms of a greater diversity of practices, increased frequency in a particular practice, or a different or larger repertoire of modes of engagement—accomplishing tasks collaboratively or individually.

If practices refer to the broad range of literacy activities, our third dimension, *processes*, signals the "micro-practices," the specific moment-to-moment transactions between learners and print. When given opportunities to read and write texts that build on their existing interests and abilities, adults who may have previously considered themselves "illiterate" frequently exhibit a range of strategies. Further, when presented with a scaffolded situation (one in which the teacher or tutor reads or writes alongside the adult, helping as needed, or a situation in which adults work collaboratively to support each other's reading or writing), adult learners display their competencies rather than their deficits. Development or change in practices can be observed

Table 1

Dimensions of Adult Literacy

BELIEFS	PRACTICES
Adults' own theories or knowledge about language, literacy, teaching, learning.	The range and variation of learners' literacy activities in their everyday lives.
Though often unspoken, beliefs play a pivotal role in learning and teaching. If made explicit, beliefs can inform assessment and instruction. Beliefs—experiences, attitudes, and understandings—inform adults' plans, goals and practices. Beliefs show the impact of previous schooling and learners' perceptions of themselves as readers and writers. Learners bring and acquire knowledge about reading and writing tasks, texts, processes and contexts.	Adult learners take part in a variety of literacy practices, whether or not they name them as such. Because literacy practices vary, so do the types and uses of literacy in various communities: there is no one "literacy" but instead there are multiple literacies. Often there is a gap between literacy practices at home and practices taught and assessed in schools and programs.
PROCESSES	PLANS AND GOALS
Adult learners' repertoires of ways to manage reading and writing tasks and the products of these transactions.	What adults themselves indicate they want to learn, and ways they go about making learning happen.
In any transaction with text, readers' and writers' processes should fit their purposes and intended outcomes. Reading and writing processes are more than decoding and encoding: Readers' responses may include the experiential, descriptive, analytic, and/or evaluative. Writers' composing processes vary with different texts, tasks, and audiences. Processes include stylistic differences in learners' preferred ways of approaching and carrying out literacy tasks. In reading and writing, adults both bring prior knowledge and acquire new knowledge which can be assessed.	Planning and setting goals are sometimes formalized at the beginning of a program; they are also ongoing processes of negotiation and decision-making. Learners' plans and goals vary widely and grow from their particular beliefs, practices, and processes. Learners' plans and goals can inform teaching and assessment.

by teachers or researchers or reported by the learners themselves and may include more confident approaches to reading and writing tasks, more efficient and effective use of a wider range of specific moves and strategies, and more intentional selections of processes appropriate for specific purposes.

The fourth dimension, *plans*, includes both what adults themselves indicate they want to learn—their overall intentions as well as more specific goals—and the ways adult learners participate in the learning process. Central to these planning and goal-setting processes are the particular roles played by tutors or teachers and by adult learners. When goals and plans for learning are actively negotiated over time, teachers and adult learners together determine what opportunities for or constraints on learning will occur. How adults are labeled by others and by themselves affect their participation in determining what and how they learn. Adults who consider themselves and are considered by others to be competent and powerful play significant roles in determining the content, sequence, pace, and method of their learning. We have observed that development in this, as well as in each of the other dimensions, is not linear. When adults have opportunities to shape their own learning, changes in their plans include identifying new goals, becoming more aware of what is involved in accomplishing these goals, and determining new priorities. Adults' goals may change from general to more specific short or long term goals. They may become increasingly aware of constraints or obstacles to change in themselves and in their situations, and they may develop strategies for dealing with these constraints or obstacles.

ISSUES IN STUDYING LITERACY LEARNING IN ADULTHOOD

The Dimensions Framework provides a way of looking at literacy development that yields a richer, more comprehensive profile of adult learning. Taken together, the four dimensions enable researchers, practitioners and adult learners to reflect on current accomplishments in relationship to literacy histories and future opportunities. At the same time, the framework draws attention to factors which complicate research on literacy development in the context of participatory teaching and assessment. With two examples, we illustrate some of the questions about interpretation that have arisen in the process of using of this conceptual framework. These examples suggest that, in our sense-making about literacy learning, we need to make problematic our own assumptions about what counts as growth or change by inviting learners into the conversation as interpreters of the data about themselves.

Returning to Berger's statement that we can *see* only what we choose to *look* at, we are reminded of the significance of person and perspective in apprehending the world. When learners' lives become texts to be read, questions about the act and agency of interpretation inevitably emerge. Recent work in critical ethnography and deconstructionist theory (Clifford & Marcus 1986; Lather 1986; Anderson, 1989; Mischler, 1986), for example, has increased awareness of the complexities involved when qualitative researchers "tell the story of" or interpret their data. Understanding and assessing the literacy development of adults who enter literacy programs is problematic, in part because interpretation depends on who is reading what texts and which of several possible stances as a reader the interpreter or "story teller" adopts. As is evident in the following examples, meanings made by adults, adult literacy educators, and researchers may vary insofar as they are informed, but also constrained, by different readers' varying purposes and conceptual frameworks (cf. Lytle, in press, for a more extended discussion of these issues).

Example 1: Conflicting Conceptions of Composing

In our example, Alisa Belzer (in preparation), an adult literacy teacher-researcher participating in the Adult Literacy Evaluation Project, describes her experiences working with students in her adult literacy class focused on writing. In an excerpt from her teacher-researcher journal, she recounts a particularly problematic incident:

> In writing, I feel that growth occurs . . . from re-reading, revising, and choosing whether to accept suggestions from colleagues. On Donna's second day in the class, she courageously offered to share what she had written. In this group, I had worked hard at getting people to share their writing as a way to give and get feedback, and it had begun to feel like a successful writer's workshop. On this day, however, the first or second person to respond to her piece broke all the rules, blasting Donna for connecting every sentence with "and." Donna was devastated. And two things happened to her writing. The first is that she stopped using "and" in her writing. She simply substituted the word "in." At first, forgetting the earlier episode, I assumed she was confusing homonyms. When we discussed it, I realized she was using the substitution to avoid further criticism. On the more rewarding, but harder to deal with side . . . Donna [later] wrote a letter to me which she shared spontaneously with the class during writing time. In that letter she discussed her feeling that for me nothing anyone ever wrote was good enough. By my always asking the group for feedback on everyone's writing, she had lost . . . confidence . . . as a writer . . . I felt terrible that my intentions and expectations had been so misunderstood and/or poorly communicated . . . yet this [letter] was the most powerful, self-assured piece that Donna ever wrote. Donna found her writer's voice . . . and I learned that in trying to treat writing as an evolving process, I was coming off as an ever-critical nag. We sure were coming from different places, but we sure were learning. (p. 7)

Using our conceptual framework to look at the events described in Alisa's journal, we can unpack some of what occurred. Alisa noted that Donna's beliefs about the writing process did not include peer feedback as a stimulus to revision. Donna seemed to believe that collaborative reading and responding to each other's work implied that working by themselves writers could never meet a teacher's predetermined standard. Donna's dissatisfaction motivated her to write and deliver in public a critical and reasoned letter to her teacher, a decision Alisa as a practitioner regarded as an exciting and authentic use of written language within the program. While the letter's message revealed some discontinuity between their beliefs about what contributes to growth in writing, it also signaled that Donna had adopted a new strategy for responding to criticism, one which was considerably more empowering (in Alisa's view) than substituting *in* for *and*. Donna was using writing to confront differences and to take charge of her own learning. This letter functioned to open up an entire area for class discussion about how learners seek and give feedback on writing, a practice the teacher had assumed was both understood and approved.

It is not clear from this entry, however, whether Donna herself interpreted the letter as Alisa did. Moving from avoidance of criticism to a proactive stance on her own needs as a learner, Donna became an analyst of group dynamics, ascribing her own loss of confidence as a writer to a class routine she confidently labeled debilitating. Here we find a learner's literacy beliefs informing her practices and processes. In relation to her own goals, she evaluated her teacher's method and found it an impediment to her becoming a more proficient writer. What we don't know from this journal excerpt, however, is Donna's own "reading" of what happened, that is, the extent to which this incident altered Donna's perceptions of the social nature of the composing processes, her beliefs about writing, or her conception of the different roles teachers and learners should play in constructing the curriculum.

Using the Dimensions Framework as an analytic tool, we notice here possible discrepancies between teachers' and learners' perceptions of what contributes to, impedes, and counts as learning. While a dialogue between teacher and learners about contrasting beliefs might lead to some immediate resolution (in fact Alisa informs us that much was clarified in the ensuing discussion), it is less clear that there would be agreement about what learning occurred or what counts as significant change or development. Documentation of growth is not simple when perspectives of both teacher and student are assumed to merit consideration and respect. While Belzer seems to have marked the student's letter critiquing her teaching as pivotal and an indicator of growth in the adult's development of voice, Donna herself may have remained unconvinced, neither recognizing nor counting this episode as learning something about the composing processes. While on the one hand we can tell this as a story of change in both beliefs and practices, as researchers we need to remember that we are using Donna to tell our own story, one that is not necessarily reflective of her experience.

Example 2: Different Readers, Different Texts

A second example also illustrates the complexity of using a multidimensional framework to interpret what counts as literacy learning, but in this case draws on a transcript of an interview with an adult learner. Part of The Adult Literacy Evaluation Project involved lengthy interviews with adult learners designed to explore their literacy histories. We conducted these interviews because the data from our initial assessment interviews indicated that adults entering even the most basic literacy programs had considerable experience using written language in their daily lives. Intake interviews with their limited time frame provided a glimpse of these experiences, but we felt that to improve the intake process we needed more data. As we worked over a period of years to generate knowledge about literacy beliefs and practices, we returned to these interviews and found that our own interpretations given previously to adults' statements did not necessarily endure over time. In other words, we became less sanguine about our "readings" of these transcripts and more sensitive to the issues of *looking* and *seeing* that have framed this discussion.

In the example here, an adult learner named Portia recounts in an interview her experiences with print prior to entering an urban literacy program and prior to considering herself literate:

> I had a friend and he was in Germany. And I never knew how to write letters. And my cousin used to always, I used to contradict [dictate] my letters to her. And she used to write them. And I used to say, "Well it seemed kind of bad. They are my words, but you actually written the letter."
>
> So she said, "Don't worry about it. You'll learn how to write your own letters." And I used to write it and she'd say "read it back."
>
> But it was funny, even though I couldn't write it, I was always able to read whatever I contradict [dictate] to someone. So I read my letters. And afterwards I rewritten them in my own handwriting. And then afterwards I say, "Okay I'm going to write my first letter." And I took all the letters that she ever written for me and spread them all over the bed. And I was able to read all of the letters, though. And I just kept on reading and reading them. And then I said, "Okay, get plain paper, pencil." And I started writing my own letter. When I first write my first letter, it's like a three page letter. But it was out of a lot of the words that I was writing that

> was already written already. But they were still my own thoughts. And most of the time when you write letters, it's almost, say about fifty percent of the same words. But adding different things and different timing. So, what I did, I written it in scrabble-like what I really wanted to say, and whenever that might have happened at a newer time, or something that I wanted to ask about a previous time that I didn't get a response to. And before I knew it I was able to write letters. And from there on, I told her, "See you don't have to write any more letters for me. I can write them now."
>
> She said, "How do you do it?"
>
> I say, "I write over. I take the letters that you write out and I analyze what was written." I must have read them over and over and over. And I still have the letters. I read them. And I write over and now I don't even have to go back over them. I can write now. Which I don't have to write to him because we don't talk any more. But being able to write them was a big expression.

In our original discussion and analysis of the interview (Lytle & Schultz, 1990), we pointed to rich details which display this adult learner's literacy practices and inventive processes for accomplishing literacy tasks using the resources available to her. As researchers trying to understand literacy development in adulthood, we commented that by using letters she had spontaneously invented her own version of the Language Experience Approach (LEA). We noted that when Portia used her own prose as the text, to her surprise she was able to read. Though claiming on the one hand to be a "nonreader," given the opportunity to talk about her own reading and writing, she began to describe a full range of literacy activities. Distinguishing between copying and composing, she reused words from old letters to create new meanings. Further, through many repetitions of the same process, she came to a theoretical insight about language use allowing her to gain more control over the genre. And we concluded our analysis of this passage with the observation that even when adults attest initially to their inability to read and write, they often proceed to describe a wide variety of accomplishments in which literacy plays a role. Some of these experiences imitate school routines while others, as in the case of Portia, reveal original strategies and tenaciousness in accomplishing personal goals.

Revisiting our own interpretation more than a year later, we see that although we had challenged the societal label (we did not consider her to be illiterate), a number of critical assumptions were unexamined. The assessment process developed out of ALEP was designed to be participatory and collaborative, yet here we saw that the research on adult literacy learning (the larger agenda of the assessment project) was being built on interpretations made primarily by university-based researchers. In other words, we used this interview and others to read *her* life according to *our* categories. From the stance of researchers we acquired some "good data," but we began to question the power of interpretations which did not emanate from Portia herself. At the time of the interview we did not ask her to comment on this story, nor did we interrogate the passage for its possible significance to her. Inadvertently, while working hard to establish collaborative relationships and participatory modes of assessment, we had begun to "read" and interpret the data for our own purposes. Without her involvement, however, we risk objectifying her experience and misreading its significance.

What this example suggests is the importance of looking *with* adults as a way to enhance the likelihood that we can *see* what is going on. Portia's narrative of writing letters from letters, without her own interpretation remains at the least somewhat incomplete. What did *she* make of the insight that she was able to read what she couldn't write? Of what significance to Portia was her composing her own "new" thoughts from previously used words and sentences, her frequent rereading, her insight that writers repeat many of the same words and structures? What processes did she use to "analyze" (her word) what was written, and how did those invention strategies function heuristically, to help her to compose? Did she continue to write letters for different purposes and/or audiences? Would Portia herself describe the changes portrayed in her narrative as "growth" and herself as a developing reader and writer? Is literacy in Portia's view acquiring "skills" in reading and writing—or is it something different, something more (Lytle, in press). While Portia's experience telling stories may have helped her see her own literacy history in a new way, her own reflections on and interpretations of these stories would add a critical dimension to *our* understanding. And eliciting these reflections through conversation would help to alter conventional notions about knowledge through creating new roles in knowledge generation for researchers, practitioners and learners.

CONCLUSION

In this paper we have argued that the literacy learning of adults should be regarded as a complex phenomenon resisting simple labels. By attending to learners' beliefs, practices, processes, and plans, researchers as well as practitioners and adult learners themselves come to view literacy learning as multidimensional. Constructing such a picture or profile requires a process of coinvestigation in which adults play a central role, not only in providing data, but in analyzing or making sense of it from their own experience. In generating knowledge about literacy development, researchers need to take into account the inevitability of many texts and many interpretations, and thus to design research which does not simply privilege their own perspective.

Further, closely examining the literacy-related narratives of adults would suggest that participating in the making of knowledge is more than a necessary corrective on the vision of researchers, but an empowering and even transforming process in its own right. As both research and practice move toward this more emancipatory perspective, adults may become subjects of their own learning, generating knowledge of and for themselves. There is evidence that strategies for teaching and for conducting research can either facilitate or impede the work of adults impelled in this direction by their own needs and interests. The experience of being interviewed, for example, can create a context in which informants' narratives serve to organize and make sense of their experiences (Mischler, 1986). Through speaking in one's own voice and telling one's own story, an adult learner may arrive at understandings which in turn lead to possibilities of action and further reflection. Constructing vivid images of how literacy unfolds or becomes visible in adulthood may depend on blurring distinctions between teacher and learner, researcher and researched, and at the same time looking to see what may at first appear peripheral or not within immediate reach.

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THRIVING AND GROWING WITH CHANGE

Laura R. Roehler and Sharon Rushcamp
Michigan State University

Florence Lamberts
Spartan Village School

Fundamental changes are occurring in teacher education. Curriculum, instruction, and school leadership are being reformed and restructured. Teachers are moving out of passive, recipient roles and into interactive, dynamic roles (David, 1989). In many places around the country, these change efforts are occurring for school and university faculties in collaborative settings where partnerships are occurring within professional development schools. The Holmes Group (1990) has defined *professional development schools* as places where the development of novice professionals, the continuing development of experienced professionals, and the research and development of the teaching profession are occurring.

Recently, the faculty of seven public schools joined Michigan State University to become professional development schools (PDS) focusing on thoughtful, long-term inquiry into teaching and learning. These seven schools, collaborating in school-university partnerships, are committed to three goals: (a) teaching and learning for understanding, especially the at-risk population; (b) improving the continuing and preservice education of teachers; and (c) restructuring the management and organization of the school.

These efforts occurred within an established learning community where faculty (teachers, principal, university professors, and graduate students) were committed to encourage and reward the development of personal ethics where social responsibility both within themselves and others was primary. PDS discussions revolved around interactive reasoning where problem framing occurred and problem solutions developed in dynamic and fluid ways during whole school efforts. Learning for all participants was a continual state of growing where ideas were added on, dropped off, expanded and explored.

This paper describes the efforts of Spartan Village Elementary School to develop and implement a PDS by restructuring (a) leadership roles for teachers, (b) professional growth time, (c) team teaching, and (d) collaborative classrooms. Specifically, the restructuring efforts were examined in terms of two research questions: (a) impact on student learning and (b) principles that successfully guided the implementation process.

METHOD

Subjects

The Spartan Village PDS faculty and elementary students participated in this study. The Spartan Village faculty included 18 teachers, 3 instructional aides, 6 university faculty and 1 principal. About 300 students attended Spartan Village School (SVS), a multicultural/lingual elementary school located in mid-Michigan. Its ethnically and linguistically diverse population represents 38 countries. About half of the students used English as a second language, with many enrolling with little or no English. Over half of the students were members of transition families having recently moved, experiencing divorce, or making a significant life change. The majority of teachers at the school were career teachers with several years of teaching experience. These teachers and the principal, who has been at SVS for 16 years, gave the school stability. The university faculty have a long history of working in public schools. The school community, in contrast, was a transient one. Parents of the school children were students at the university, and a typical length of stay at Spartan Village School (SVS) was 2 years.

Procedures

As Spartan Village Elementary School became a professional development school, four types of restructuring were developed. *Restructured leadership* provided opportunities for teachers to assume new roles. *Restructured professional growth time* created opportunities for whole group dialogues. *Restructured team teaching* provided new ways to develop and teach integrated science units, and *restructured classrooms* provided for new classroom roles for teachers.

Restructured leadership. Coordination of Spartan Village professional development activities was steered by a coordinating committee called the Strategic Planning Team. The Strategic Planning Team, comprised of six teachers, the principal, and two university faculty, had responsibilities which included planning, developing, coordinating and assessing professional development school projects and efforts. This group focused on continued improvement of (a) instructional practices and materials; (b) the school's ethos and environment; (c) the orchestration of events and ideas; (d) emotional and professional support; (e) time, space and equipment usage; (f) budget planning and implementation; and (g) policy development. The Strategic Planning Team was responsible for coordinating individual and team projects and for making sure that the work fitted with and enhanced the shared vision. Additional responsibilities included maintaining the long view and being aware of how short-term successes and frustrations bear on the long-term development.

Restructured professional growth time. A second type of restructuring was a weekly extended lunch period which allowed the entire Spartan Village School faculty to develop and define shared understandings of the PDS aims and efforts. During these extended lunch periods, opportunities were provided for growth through discussions of collaborative classroom projects; shared issues of common interest, such as conceptual change unit planning or similar vocabulary used at different grade levels to give the children tools for critical thinking; and ways to develop students' capacities to reason about and discuss ideas at each grade level. So that the longer lunch period was valuable for students, a variety of educational activities were arranged for them.

Restructured team teaching. The third type of restructuring, a collaboratively planned and team-taught series of integrated science lessons on weather, grew out of discussions during the extended lunch periods where all collaborative faculty created integrated units on weather. The purposes of this project included: (a) engaging in collaborative planning and teaching; (b) focusing on developing science teaching and learning within integration of other subject areas, especially literacy and oral language; (c) experimenting with the conceptual change model; and (d) investigating how some of the thinking that underlies approaches to mathematics teaching and learning might play out in teaching science, literacy, and other subjects. Of central concern was the question of changing students', parents', and school faculty's understandings about the role of a teacher in a classroom. The notion was developed that instruction for a group of students could be shared and that the teaching role should be expanded to include more opportunities for inquiry, reflection, and collegial discussions.

This project was taught within a restructured afternoon schedule and involved children across grade levels. Primary grade children (K–2) were grouped together and then placed into groups of 20 to 25 as were upper grade students (3–5). For all faculty participants, the weather units involved them in new ways of collaboration, planning and team teaching. Planning and teaching included investigations of what there was to learn and to know about weather at Spartan Village with attention to opportunities for cross-subject integration. Reading, writing and dialogue were important components of all weather lessons. Mathematical measurements were a useful medium for significant integration. Geography as it is related to weather became an integrated component. Everyone learned more about weather and explored the ways dialogue, reading, and writing could be used as weather content was learned. What children of different ages were likely to know or assume about various aspects of weather were attended to, and strategies for learning more about students' understandings were developed. The science unit took place during March and April and was analyzed and evaluated through May. All participants valued the experience, and opportunities to continue this type of restructuring are being explored.

Restructured collaborative classrooms. The last type of restructuring involved individual classrooms where a classroom teacher and a Michigan State University professor or graduate student shared a classroom for the specific subject areas of literacy, mathematics and science. These teams explored the question of how to create, implement, and evaluate instruction that increased understanding where the focus was on reasoning and dialogue, not just memorization and teaching as telling.

The classrooms focusing on literacy explored the ways to help students move toward literacy within the outcome areas of positive attitudes, conceptual understandings, strategic processes, routine skills, and discipline knowledge. The movement toward literacy occurred within a literacy learning community where students progressed through authentic events of reading, writing, and dialogue that were integrated with other subject areas.

The classrooms focusing on mathematics explored ways to foster student inquiry and develop students' mathematical power while also developing their understandings of important concepts and processes. The construction and orchestration of a mathematical learning community was constructed where mathematical reason, not the teacher or the text, was the source of authority. Students were engaged in problems and participated in discussion, investigations, and projects. They made and pursued conjectures, investigated patterns, modeled and represented real-world problems using writing as a medium within a learning community.

The classrooms focusing on science involved students in the exploration and development of personally motivated science pursuits where literacy and the other curriculum areas were integrated into science. These classrooms incorporated both the district's science objectives, the faculty's experiences, and their beliefs about the scientific process and content. The science instruction and learning involved cooperative work within groups of students who explored and observed in order to develop and implement experiments to address scientific questions of their own formulation. The new knowledge and understanding was communicated through the production of journals, books, and portfolios within a community of learners.

Analysis

Four data sources were used for this study: (a) the *Michigan Education Achievement Program* (MEAP) test for science (Michigan Board of Education, 1990); (b) a videotaped, group interview of students' understandings about weather; (c) audiotaped transcriptions and minutes of Strategic Planning Team meetings and whole group meetings (teachers, aides, and university personnel); and (d) individual teacher's and university faculty, audiotaped interviews. The MEAP results were analyzed using quantitative and qualitative research procedures where the scores of fifth-grade students who were at Spartan Village School during restructuring efforts were compared with those who were not. The student group interview data were analyzed using the constant comparative method (Glasser & Strauss, 1967). The audiotaped transcripts of whole group meetings, Strategic Planning Team meetings, and the teacher and university faculty interviewers were transcribed and also analyzed using the constant comparative method (Glasser & Strauss, 1967). Evidence of guiding principles for implementation was noted and reconfirmed as data were read and reread individually by two of the authors. In order to refine hypotheses, the results were compared, with all differences being reconciled through discussion.

RESULTS AND DISCUSSION

The results are presented first in terms of the research question about student learning and then in terms of the research question about the principles that successfully guided the implementation efforts.

Research Question One: What Was the Effect of Restructuring on Student Learning?

Effect on student learning was explored in two ways. First, an analysis of the results of the *Michigan Education Achievement Program* (MEAP) test for science, given to fifth graders every fall of the school year, showed that 16 students who had attended Spartan Village School during the 1989–90 year yielded an averaged mean of 26 of a possible 30 for the MEAP test. Six students who had not attended Spartan Village School during that year yielded an averaged mean of 19. A one-way analysis of variance showed that fifth-grade students who attended Spartan Village during the restructured efforts had science knowledge that was significantly greater than students who had not [$F(1, 20) = 9.63$, $p < .005$].

The second way effect on student learning was explored was through a group interview given at the completion of the restructured team-taught unit to a randomly selected group of 15 third, fourth, and fifth graders, 5 at each grade level. The results showed that the students consistently used dialogue strategies during the weather discussion. All students contributed as they listened to each other and built on each other's ideas. For instance, during a discussion of what causes temperature to change, a fifth grader challenged a third grader's response about white rocks attracting more heat than black dirt. When this occurred, the whole group, including the student who had been challenged, brainstormed useful ways to resolve the challenge based on their experiences. One boy from a country near the equator said people wore light colored clothes so they would not attract heat and one girl illustrated the scientific principle by discussing the differing heat, of asphalt and grass on hot days on the playground. Students spoke comfortably to each other, supporting and challenging ideas as the ideas about the weather unit were reflected on and developed. This group used a type of dialogue where problem solving procedures were successfully and actively employed.

Research Question Two: What Guiding Principles for Implementing PDS Efforts Were Critical?

Five principles emerged from the data in this study that seemed critical for guiding the restructuring efforts where teaching and learning for understanding were valued and where integration of subject matter within a learning community was featured.

Guiding principle one: The role shifts of members of the steering group who assume decision-making and leadership roles should be carefully nurtured. Central to understanding the collaborative nature of decision-making at SVS was the shift in authority relations within the school. The Strategic Planning Team resulted in participatory decision-making where teachers assumed new decision-making roles and the principal and university coordinator relinquished some decision-making roles.

Within ongoing workings of the Strategic Planning Team, data indicated that the principal's and university coordinator's roles were found to be critical. In forming a collaborative group, leaders with all the answers could destroy the emerging new roles of the group, whereas leaders with no possible answers could weaken the group's efforts. The leaders' roles became one of offering opportunities for possible answers while capitalizing on those times when teachers' thoughts and ideas could lead. For example, during meetings, the principal or coordinator often made suggestions. At times, these suggestions were used; at other times they were passed with little or no immediate response. This same suggestion frequently resurfaced in subsequent discussions from teachers in the meeting. The coordinator noted in one interview that patience is important in a leader's role when working in collaborative groups where role shifts are occurring:

> There is a continual process of learning going on; change is taking place, and change needs time. New ideas and roles cannot be forced or run through. Rather, everyone must have time to "try on" the new ideas and roles. Sometimes, as dialogue unfolds, a concept or understanding about a new rule fits in again at a better time. Often, a leader has to "let go" and trust that professional growth is developing.

By nurturing the opportunities for teachers to lead, teachers who knew more about professional development took more responsibility within the steering committee. This group assumed decision-making and leadership roles that moved forward the goals of professional development within a learning community environment.

Guiding principle two: The nature, direction and pace of change should evolve from the community participants. It was established early that all participants of the community should assume responsibility for defining and developing their work. The participants included teachers, teacher aides, the principal, and university faculty and graduate students who assumed teaching roles. Some participants provided information during formal and informal group meetings, whereas others assumed leadership roles and processed the gathered information during the Strategic Planning Team meetings. Regardless, the participants, as the closest to the needs and problems of the community, were in the best position to define those needs and frame and solve problems. From the data, three instances where participants determined the nature, direction, and pace were found.

The first problem, the need for whole group dialogue, was resolved by creating the extended lunch for 70 minutes once a week where school faculty had opportunities to engage in collegial dialogue about mutual professional interests. During this same time frame, students were involved in appropriate educational experiences implemented by professionals outside the Spartan Village learning community in order that all teachers and teacher aides could participate in the whole group dialogue.

The second problem identified was time, time needed for dialoguing to (a) develop a shared language, (b) decide about change, and (c) create a collaborative model of working together. The need for time for dialoguing was resolved by the weekly extended lunch, released time from classroom instruction provided by university faculty and substitutes, and informal structures of information exchanges that occurred before daily instruction started, during breaks, and after school. Within all three instances, opportunities for dialoguing were provided.

The third problem related to change was the need to have students be comfortable with several people as their teachers rather than just one classroom teacher. For the role of teachers to be changed, teachers became responsible for a class as a member of a team, while also being a professional colleague and a teacher educator. This problem was addressed by the restructured afternoon and collaborative classroom projects. In both projects, students reported in post interviews that they thought of all of their teachers in the weather program as *their* teachers, not just their one regular classroom teacher. They also began to understand that they could learn from and teach other children of all ages. Other students and other teachers in the building became viewed as regular teachers.

Guiding principle three: Existing strengths within the community should serve as the foundation for future change. The third principle that guides Spartan Village work was the belief that existing strengths should serve as the foundation of future change. By drawing upon the school's greatest resource, its strengths, a solid foundation was laid for PDS efforts. For example, early in the first year, the Strategic Planning Team identified two strengths of their school. These included (a) their diverse student population and (b) their family-like atmosphere.

From the interview data, teachers at the school viewed this diversity as a strength. ``We have representatives from every country—it's like a microcosm of the world in our building. What better way to teach and learn about the world!'' one early-elementary teacher enthusiastically explained during an interview.

The teachers believe that this student diversity encourages respect of differences as well as similarities among all students at the school. As one teacher said during an interview, ``The kids here know that there isn't simply one way to do something—there are many ways. Seeing and respecting each others' differences lays the groundwork for living in the world in an open and tolerant way.''

The second strength of SVS identified by faculty members was the close-knit, family-like atmosphere of the school. This atmosphere, which valued collaboration and working together, offered teachers a natural way to report their ideas and projects to other interested faculty. Members of the Strategic Planning Team developed a series of informal presentations at the extended lunch meetings involving teachers teaching other teachers. For these presentations, teachers focused on children's conceptions at each grade level and shared their attempts to improve teaching and learning at respective grade levels. This series of teacher-led presentations began with kindergarten and first-grade teachers' explanations of the ways children at those levels are encouraged to think critically and collaborate with each other. Teachers at other grade levels followed with subsequent presentations. As one teacher indicated for an end-of-year interview, these presentations were typical of teachers' eagerness to listen and learn about each other's strategies, continuing the sense of community. She further stated that these discussions also helped teachers make the transition to teaching new age and grade levels in the multiaged, integrated, science unit.

Changes selected by the teachers were built on existing strengths of diversity and a family-like atmosphere. As teachers integrated new research findings into their teaching, these existing school strengths served as a foundation for change. The prevailing orientation was one of a ``can do'' spirit.

Guiding principle four: A balance of support and challenge should be established within the community. At Spartan Village, the maintenance of the balance of support and challenge depended primarily on the roles played by the principal, the university coordinator and the teachers. The role that the principal plays was best described by a teacher who said, ``Our principal is a nurturing individual. She has the ability to be focused yet sensitive. She tries to understand the personalities of the teachers, and she supports us. She's more interested in long-term ideas rather than short-term ones. She challenges our thinking and our teaching.''

A second important role in maintaining the balance of support and challenge was the university coordinator's role. Changes that created challenges had to be balanced with support while conceptual frameworks were established which encouraged risk taking and promoted an atmosphere in which teachers could learn from each other. One teacher observed, "We need a person from the outside. She helps us see the same thing in different ways and brings a fresh perspective and enthusiasm. She knows what's important to us and helps us do it."

The third important role in maintaining the balance of support and challenge was the teachers' roles. The teachers played important collegial roles in maintaining the balance of support and challenge in a situation where teacher knowledge, inquiry and risk taking were valued and judgment was suspended while different views and perspectives were explored. One teacher explained, "There are no judgment calls here. You can feel comfortable admitting confusion or a hard day. In other places, people might lose confidence in you but here they're supportive."

The results of maintaining a reasonable balance of support and challenge were found in the transcription and minutes of the meetings. Teachers continued to support shared beliefs and understandings, but more actively and comfortably disagreed, built and extended each other's suggestions, and more confidently addressed substantive issues where differing views occurred. Several teachers noted an increased sense of respect for colleagues' diverse ways of thinking and teaching. Teachers sought ways to examine each other's strategies, and this approach contributed to a sense of community. In an end-of-year interview, one teacher stated: "I had a greater sense of being part of developing a real learning community." Finally, one of the teacher educators indicated in her interview that, "Spartan Village School is a place where inquiry is central, and experimentation and discussion are valued. People here question things about teaching and learning which are substantive."

Guiding principal five: The curriculum and instructional complexities should be acknowledged and embraced within the community. There is a tendency in education to try to reduce learning into disparate parts to simplify for better understanding. When complex situations and knowledge are reduced, the results often are that the parts are never brought together again into an integrated whole. Learners in these situations are left with isolated, discrete pieces of information with little sense of usefulness for their world. Professional developers need to help teachers who in turn help students create conceptual frames, identify tasks that are of interest, learn those tasks within the conceptual framework, and finally independently use the knowledge while operating from their newly developed conceptual framework.

Our analysis showed that four types of complexities were recognized and built upon in the PDS efforts. First, the teachers recognized the need to embrace the complexities when developing the restructured multiaged, team-taught science unit. The data showed that the teachers did not simplify, they drew on the strength of the complexities regarding diversity and expertise that reflected their interests and resources. The result was the complex integrated unit on weather. Second, analysis of the meetings showed that the principal acted in ways that allowed the teachers to grow within the complexities. She supported the complexities by expediting needs, arranging meetings, and monitoring demands on teachers' time. The teachers were able to combine and integrate their goals for literacy, science, art, music, mathematics and social studies into the weather unit. Third, analysis of the interviews showed that the teacher educators grew as a result of all participants embracing the complexities. The teacher educators, as researchers-in-action, had many opportunities for informal and spontaneous meetings with teachers. The teacher educators commented that these meetings offered rich insights into teacher concerns and decisions. This day-to-day involvement with teachers and students at the school increased their awareness of the complexities of teaching and change in schools and provided valuable opportunities to ground research in the day-to-day constraints of the structure of the school.

Finally, acknowledging and embracing the complexities provided unique learning experiences for the children. The interview data showed that children in the multigrade weather rooms were encouraged to work cooperatively in pairs or groups and talk with each other about their work. Several of the children noted that they liked meeting other students in the school whom they had not previously met, being taught by different teachers and hearing other children's ideas in the weather rooms. The uniqueness of the weather room was reflected in one second grader's appraisal, "I could see what kindergartners know about weather and help them."

CONCLUSIONS

Student, teacher, and teacher educator change did occur at Spartan Village Elementary School. We grew and we thrived. Teachers became more empowered as collaborative decision makers at classroom and leadership levels; teacher educators became more knowledgeable about the workings of the school, and students performed significantly better on the State of Michigan's MEAP for science and grew in their ability to dialogue about the reasoning involved in learning subject matter. The strength of this change was supported by the professional development efforts within a learning community context. A new place was created, a place where school faculty and university faculty met on a collegial basis, developing new understandings about teaching and learning. This is a sharp contrast to many school settings where school faculty simply receive important information given by university faculty, thereby creating a hierarchy of empowerment where one group provides knowledge and the other group receives that knowledge.

Exploration through the use of transcripts and interviews concerning this successful collegial relationship where all were empowered showed that certain guiding principles supported this implementation effort. The decision-making body needed help as they assumed new leadership roles. This group, representing all the school's participants, determined the nature, direction, and pace of growth. All change efforts began with an examination and use of existing strengths as a continual state of growing was encouraged and supported. A continual state of growing occurred best when challenge and support were balanced within the existing needs of the community. Finally, the complexities of a professional development school where collegial relationships were established by school and university faculty within a learning community context can not be simplified or reduced to individual components. The complexities should be embraced in order to retain the balance of challenge and support for continual growth. Our children and we ourselves, deserve nothing less.

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A COMPARATIVE STUDY OF THE TEACHING EFFECTIVENESS OF TEACHERS PARTICIPATING IN A YEAR-LONG OR 2-WEEK INSERVICE PROGRAM*

Carol A. Lyons
Ohio State University

Researchers have given great emphasis to the critical role teachers play in beginning reading instruction (Adams, 1990; Chall, 1983; Goodman, 1989). The teacher's role becomes even more critical when teaching students who are displaying difficulties in learning how to read (Allington & McGill-Franzen, 1989; Clay, 1979). Previous research has generally centered on the teacher's role in facilitating cognitive processing and strategy use in students (e.g., Palinscar, 1986; Palinscar & Brown, 1984; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989). However, there has been increasing recognition that learning to read is not only a cognitive process, but a sociolinguistic process as well (Cook-Gumperz, 1986; Rowe, 1989) and that behavior patterns and social interactions between teacher and student affect what students learn and how they learn (Erickson, 1982; Green, 1983). Findings from 15 years of longitudinal research about how children become literate (Wells, 1986) have shown that children's learning depends on the teachers' instructional actions, specifically the opportunities they are provided to negotiate meaning through conversation with the teacher. In a comprehensive review of teachers' instructional actions, Roehler and Duffy (1991) concluded that instructional effectiveness does not depend on prescriptions, commercial programs or teacher education programs that direct teachers to engage in specified actions in order to ensure effective reading instruction. Instead, instructional effectiveness was dependent upon the teachers' ability to flexibly adapt their actions to fit specific contexts. Although researchers have suggested that inservice programs should focus on helping teachers learn how to tailor instructional actions to accommodate situational demands (Lampert, 1984), researchers have not field tested inservice programs designed to accomplish this goal.

The Reading Recovery program (Clay, 1985) provides an ideal arena for examining teachers' instructional actions that are effective in helping high-risk students learn how to read and the nature of the training program that enables teachers to learn how to become effective. Examining teachers' and students' behaviors in the Reading Recovery program is especially informative because the program targets the most difficult children to teach. Although all beginning readers depend on the teacher's skill to a certain extent, high-risk students rely disproportionately on the teacher's expertise because they have not yet developed the rudimentary system that allows them to learn from the act of reading itself. Clay (1991) describes this view of reading as a "self-extending system."

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Recent research (Lyons & White, 1990) revealed that Reading Recovery teachers who discontinued (released) the greatest number of students from the program seized the most powerful "teachable" moments to teach students how to use strategies they had already acquired to develop new understandings. These successful teachers grew in their ability to recognize "teachable" moments through weekly inservice classes that included behind-the-glass live demonstration lessons led by skillful teacher leaders.

Educators interested in minimizing the time and expense of the year-long Reading Recovery teacher training program have suggested the possible efficacy of developing a 2-week inservice program that uses the same materials, procedures, and practices devised in Reading Recovery. This idea was empirically tested in an experimental study conducted in 1988–1989 (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1991). First-grade students who scored in the lowest 20% on the Diagnostic Survey (Clay, 1985) and placed below the 36th percentile on the Metropolitan Achievement Test (1987) were randomly assigned to one of four treatment groups; Reading Recovery (RR) and Reading Success (RS) programs were included in the treatments. All children were individually administered the following pretests: Dictation and Text Reading (Clay, 1985), and posttests: Gates-MacGinitie (1984), Dictation and Text Reading (Clay, 1985). Statistical analyses using the Hierarchical Linear Model (Raudenbush & Bryk, 1986) revealed that RR was the only treatment with significant effects on all three measures at the end of the 70-day treatment, and RR students were the only group for which the effects on text reading were still evident in October of the following year.

The present study grew out of the preceding study and was designed to examine the teaching effectiveness of teachers participating in the year-long inservice program, Reading Recovery (RR), and teachers enrolled in a 2-week inservice program, Reading Success (RS). Specifically, this study asks: (a) To what degree do RR and RS lessons conform to the Reading Recovery model? (b) Are there differences in the generic quality (e.g., organizing structure, intensity, engagement) of lessons taught by RR and RS teachers? (c) Are there differences in RR and RS teachers' questioning patterns? (d) To what degree do RR and RS teachers teach for strategies? (e) Are there differences in the instructional ecology (e.g., time and structure of task, use of materials and teacher/student interactions) of the most successful teacher in each group?

METHOD

Subjects

Fourteen teachers, 7 participating in the year-long program Reading Recovery (RR) and 7 participating in the 2-week program Reading Success (RS), representing two rural, two suburban, and three urban school districts in a midwestern state volunteered for this study. For a period of 70 days, 28 students in one building were individually tutored by a RR teacher, while 28 students in another building, in the same district, were individually tutored by a RS teacher.

Teachers enrolled in the Reading Recovery course examined how cognitive, linguistic, and social theories and research on literacy learning relate to reading acquisition. Throughout the year, these theories and principles were made explicit through weekly demonstration lessons. The live behind-the-glass demonstrations provided teachers many opportunities to engage in theory building while constructing their own understandings of cognition, strategy development, and the role of social interaction in literacy learning. Through weekly class sessions and quarterly site visits by Reading Recovery teacher leaders, the teachers became more skillful in determining how, when, why, and under what conditions theoretical principles could and should be applied.

The Reading Success coursework, based on the principles and practices devised within the Reading Recovery program, was taught by two Reading Recovery teacher leaders. Teachers attended classes 8 hours per day on 10 consecutive days during the summer. They learned the Reading Recovery procedures, including how to effectively use materials and introduce the many "little books" used in the Reading Recovery program, while individually tutoring low-achieving students during this 2-week period. Instead of behind-the-glass live demonstration lessons, RS teachers participated in "behind the video" lessons. Videotapes of successful Reading Recovery lessons were analyzed to develop RS teachers' knowledge and understanding of effective decision making. Each RS teacher received two site visits from their instructor during the 70-day study.

Procedures

Behavioral data on each teacher working with one randomly selected student were collected at the beginning (4 weeks) and end (12 weeks) of instruction. Thirty Reading Recovery teachers were trained to rate the videotapes of lessons taught by RR and RS teachers using "model conformity" and "teaching for strategies" assessments. Twenty-nine teachers were trained to rate the same videotapes using "generic quality" and "questioning focus" measures. The nature of the instructional ecology of the most successful RR and RS teacher in each group was examined through structural maps and transcripts of conversations after 4 weeks of instruction using macro-analysis techniques (Green & Wallat, 1987).

Statistical Analysis

Measures reflecting model conformity, generic quality, questioning focus, and teaching for strategies were compared across groups and between two time periods. For each measure, a mean rater score was derived for time 1 and time 2.

For the model conformity and teaching for strategies, Group (RR, RS) × Time (time 1, time 2) mixed-model analyses of variance (ANOVA) were carried out. Mixed-model multivariate analyses of variance (MANOVA) with subsequent univariate analyses were performed on generic quality and questioning focus measures. In those instances where the MANOVA were applied, Wilks's criterion was used (SAS Institute, Inc., 1985).

RESULTS

Model Conformity Assessment

This measure determined the degree to which a teacher's behavior, use of materials, and responses to students conformed to the Reading Recovery instructional model. This model is based on the following components of a lesson: (a) board work (optional), (b) familiar reading, (c) running record, (d) letter work (optional), (e) composing a message, (f) writing a message with teacher support, (g) cut up sentence, (h) introduction to new book, (i) first reading of new book, and (j) unison reading for fluency (optional). Although there is no time frame or number of "activities" for each component, the teacher's decision regarding which components to use, how to use them, and appropriate points at which to use them are important to accelerated progress.

Using a scale of 1 (does not conform to a RR lesson) through 6 (outstanding RR lesson) and the accompanying descriptors, experienced RR teachers, who were blind as to subject classification, independently rated RR and RS lessons after 4 and 12 weeks of instruction. Interrater reliability was .81.

A 2 × 2 (Group × Time) mixed-model analysis of variance (ANOVA) was carried out on the model conformity ratings. A significant difference was obtained for the Group main effect, $F(1, 12) = 7.61$, $p < .05$. Follow-up analysis using the Newman-Keuls test ($p < .05$) revealed that lessons constructed by RR teachers were judged to significantly more closely represent the RR model than lessons constructed by RS teachers (see Table 1). The data suggest that RR teachers used procedures and materials to meet students' learning needs. RS teachers used materials and some RR teaching techniques, but did not base decisions about what materials and procedures to use on students' behaviors.

Generic Quality Assessment

This measure determined teachers' organization, management, and intensity during the lesson, as well as her ability to provide effective feedback and engage the student while demonstrating enthusiasm and warmth. Using a scale of 1 (the statement is not at all true of this teacher) to 6 (the statement is very true of this teacher) raters independently rated each videotape. Interrater reliability was .87.

A 2 × 2 (Group × Time) mixed-model multivariate analysis of variance (MANOVA) was applied to the seven measures of the generic rating scale. There

Table 1

Means (and Standard Deviations) for Model Conformity Rating After 4 Weeks and 12 Weeks of Reading Recovery Intervention

	Reading Recovery[a]	Reading Success
Time 1 (4 weeks)	4.39 (0.98)	2.96 (0.77)
Time 2 (12 weeks)	4.10 (1.08)	2.90 (0.85)

[a] Significant group effect ($p < .05$).

were no overall significant differences for Group, Time or the Group × Time interaction. Separate univariate analyses revealed significant group effects for Intensity, $F(1, 12)=5.27$, $p<.05$ and for Engagement, $F(1, 12)\ 5.80$, $p<.05$. Significant time effects were found for Intensity, $F(1, 12)=6.20$, $p<.05$, Engagement, $F(1, 12)=4.93$, $p<.05$, and Feedback/Praise, $F(1, 12)=6.00$, $p<.05$. No significant effects were obtained for the Group × Time interactions.

Follow-up analyses using the Newman-Keuls test ($p<.05$) showed the RR teachers to be rated significantly higher in Intensity and in Engagement than the RS teachers. Newman-Keuls test ($p<.05$) on the significant time main effects showed there was significantly higher intensity, feedback/praise and engagement at time 1 (4 weeks) than at time 2 (12 weeks) of instruction.

Questioning Focus Assessment

This measure classified the teachers' prompts and questions during reading portions of the lesson according to demands placed on the student to respond at the letter level with either auditory/sound or visual information, the syntactic or structural level, the semantic or meaning level, or with a combination of one or more of the levels. Percentages of time that students' responses were judged to demand visual/auditory, syntactic, and semantic responses were calculated for each question.

A 2 × 2 (Group × Time) mixed model MANOVA was applied. There were no overall significant differences for Group, Time, or the Group × Time interaction. However, separate univariate analyses revealed significant Group × Time interaction for visual/auditory $F(1, 12)=4.84$, $p<.05$. The interaction suggests that at the beginning of the program, RR teachers focused the students' attention to the visual aspects of print so that they learned how to use visual cues to confirm meaning. After 12 weeks of instruction, RR students had acquired the ability to visually attend to print, and thus the teachers' questions focused students' attention on meaningful language structure. Visual/auditory questions were only necessary when students needed to check on themselves and search further for additional information to confirm a meaningful prediction.

RS teachers, however, demonstrated a different questioning pattern. At the beginning of the program, teachers focused students' attention on the meaningful language structure of the text and did not teach them how to confirm their prediction with visual information. As a consequence of this type of student/teacher interaction, RS students started to ignore visual information resulting in the teachers' need to ask more visual-auditory questions. There were no significant differences between the number of questions asked by each group [$F(1, 12)=1.10$, $p>.31$].

Teaching for Strategies Assessment

This measure determined if teachers were teaching students strategies for independent problem solving. Data revealed that RR teachers were rated slightly higher than RS teachers after 4 and 12 weeks of instruction.

A 2 × 2 (Group × Time) mixed-model ANOVA was performed on the teaching for strategies analysis. A significant difference was obtained for the Time main effect $F(1, 12)=8.32$, $p<.05$. The Newman-Keuls test ($p<.05$) showed that time 1 was

Table 2

Means (and Standard Deviations) for Teaching for Strategies Analysis After 4 and 12 Weeks of Reading Recovery Intervention

	Reading Recovery	Reading Success
Time 1[a] (4 weeks)	4.42 (1.18)	3.63 (0.81)
Time 2 (12 weeks)	4.04 (1.34)	3.31 (0.63)

[a] Significant time effect ($p < .05$).

significantly higher than time 2. The data suggested that at the beginning of the program, both groups of teachers taught for specific strategies more often than at the end of the program. This is a reasonable outcome because as students make progress, they are more likely to problem solve on their own and less likely to require specific focusing which strategy questions elicit.

What the four assessments failed to reveal, however, was the effect of the strategy questions on students' behavior. Therefore, structural maps of lessons taught by the most successful teacher (success defined in terms of number of students tutored with the largest pretest-posttest gains) in each group were analyzed. A comparison of the 19th lesson of one randomly selected RR and RS student provided insights into four major differences between these successful teachers' decision-making processes.

First, although both students entered the program reading at the same text level, after 19 lessons the RR student was reading material five levels higher than the RS student. Second, the RR lesson lasted 29.12 minutes with time for each component evenly distributed. The RS lesson lasted 25.10 minutes and the essential components were not evenly distributed. The third major distinction was the teachers' use of materials. The RR student read six books, ranging from very easy texts (level 1) to more challenging texts (level 8). The RS student read six books, but the texts selected were very patterned and within the same levels of difficulty. Reading materials did not provide the RS teacher opportunities to teach for strategies nor the student opportunities to develop strategies for independent problem solving. During the writing portion of the lesson, the RS teacher did not attempt to help the student hear, segment, and analyze sounds in words by pushing counters into boxes representing individual letters (a standard Reading Recovery procedure). Instead, the student was told the letters that he could not write and then asked to make the word using magnetic letters.

The last major difference emerged in an analysis of the introduction and first reading of a new book. This event differed dramatically in length of time (RR = 9.28 minutes; RS = 3.10 minutes), difficulty level of materials (RR = level 8; RS = level 3), and teacher/student interactions as a function of these variables. The RR teacher selected a challenging text she believed was well within the student's control, containing concepts and words he knew or could identify by using his present strategies. She devoted 3.04 minutes to introducing the story, drawing the student's attention to important ideas through pictures and language in the text. The RR student spent 4.10 minutes attempting to read the material (first reading), which was followed by 2.14 minutes of unison reading. The RS teacher did not select a difficult book nor did she introduce the book. Instead the student spent 2.0 minutes slowly and accurately reading the easy text and an additional 1.10 minutes rereading it with the teacher.

Differences between the teachers' instructional focus became even more apparent in an analysis of teacher/student interactions following the running record analysis. Examination of these conversations revealed three major distinctions between teacher discourse and student response. First, the RR teacher oriented the student to the text by referring to the main idea of the story, whereas the RS teacher asked the student to recall the title of the book. Second, the RR teacher used the student's behavior to inform her instruction. For example, when a question backfired because the student was basing his response on prior knowledge, the RR teacher rephrased her question so that he would understand it in the context of the story. The RS teacher, on the other hand, did not follow the student's lead and asked questions about text he had read correctly.

Third, an in-depth analysis and comparison of teacher discourse and student response revealed how the RR teacher was teaching for strategies while the RS teacher was not. The RR teacher's understanding of and ability to follow the student's problem-solving attempts to gain meaning enabled her to recognize "teachable" moments that provided opportunities for him to use what he knew (meaning and language cues from the text) to confirm another source of information (visual/auditory). This strategy, called cross-checking, was reinforced throughout the conversation. The RS teacher's conversation and questioning pattern, on the other hand, did not follow the student's behaviors. This teacher appeared to ask strategy questions, but she did not know when, why, how, and under what conditions questions were to be asked. The questioning pattern provided no meaningful context and resulted in the student resorting to word calling. When this tactic did not work, the teacher told the student the word. He was not taught how he could use and attend to visual/auditory information to confirm meaningful language structure.

DISCUSSION AND SUMMARY

Quantitative data indicated that RR students outperformed RS students. Although the RS program was based on principles and practices devised within the RR program, and both groups were provided the same materials and learned the same teaching techniques, student outcomes were significantly different.

Statistical analyses revealed significant group differences between RR and RS lessons on the Model Conformity and the Intensity and Engagement indices of the generic quality assessment. There was also a significant Group × Time interaction on the questioning focus and teaching for strategies assessment. These significant differences suggest that RR teachers' instructional decisions and mediating actions are based on students' behaviors, while RS teachers appeared to base their instructional actions on a set of procedures.

Detailed analysis of the instructional ecology and teacher/student conversations in lessons constructed by the most successful teacher in each group supported these findings. The RR teacher spontaneously adjusted her behavior to respond to the student's behavior and emerging understandings. Conversely, the RS teacher used RR procedures and techniques as inflexible routines and asked a series of questions in a programmed manner, regardless of the student's actions and responses. Allington and McGill-Franzen (1989) describe this type of instruction as "undifferentiated" because shifts in instruction reflect demands or characteristics of routines and materials being used rather than needs and responses of the learner. Furthermore, the RS student had constructed a simple functional system on easy text, but was not learning how to use this functional system of responding to check predictions on more challenging text. Instead the RS teacher asked "strategy" questions that demanded visual/auditory responses about text that he had read correctly. This latter pedagogical questioning pattern is consistent with findings of other research examining reading programs designed for low achievers (Johnston & Allington, 1991).

Questioning patterns of the RR teacher, however, are closely related to the student's responses. Irrespective of the nature of the student's actual error, the RR teacher taught the student how to independently reinforce and cross-check his meaningful predictions with visual/auditory information. Their interactional style flowed more like a conversation focused on the story's meaning. The RR teacher asked fewer questions, directed attention to semantic and syntactic information, and suggested the student confirm hypotheses with visual/auditory information when necessary. This questioning pattern is supported in early (Chall & Feldman, 1967) and more recent (Adams, 1990; Clay, 1985, 1991) research on effective teaching of beginning reading.

The teachers' feedback suggests several relationships relative to achievement. Students achieve less when feedback they receive for incorrect responses is restricted to statements emphasizing visual/auditory information. The more successful RR student was better able to resolve his incorrect attempts through "sustaining" feedback in the form of a conversation. The RR teacher sustained the student's line of reasoning by rephrasing reinforcing statements, focusing on meaning inherent in semantic and syntactic structure of the language and the text, and then allowing time and giving contextual prompts to simplify demands of the task. Explicit reinforcing statements appearing in the teachers' responses are reactions and transitions that affirm movement of the discourse and sustain meaning.

In summary, data from this study suggest that it was the subtle differences between instructional programs designed by RR and RS teachers that distinguish the groups. Although quantifying these subtle differences provides some insight, the results do not provide an indepth look into what patterns and combinations of teacher/student actions are most effective in various contexts. It is the ability of the teacher to provide a context that responsively shapes instruction to the needs of the learner that makes the difference. It is not the content or form of instruction, but opportunities that the teacher provides for the student to negotiate meaning through talk. Ability to understand and conceptualize learning and instruction at the cognitive and sociolinguistic levels takes reflection, practice, and time. The RR teachers were provided time and opportunity to understand the complex processes of learning through weekly behind-the-glass live demonstration lessons held throughout an entire year. The RS teachers were not offered this opportunity. The qualitative data may explain why 3 of every 4 RR students, but only 7 out of every 20 RS students, were reading with the average of their class after 70 days of intervention. I would argue that the differences between the RR and RS inservice programs produced corresponding variations in instruction and resulted in twice as many RR students in this study developing a self-improving system for reading.

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THE CONSISTENCY BETWEEN CHAPTER I TEACHERS' BELIEFS ABOUT READING AND THEIR INSTRUCTIONAL DECISION-MAKING AND INTERACTIONS

Mary Margaret Mitchell
Centenary College

Bonnie C. Konopak
Louisiana State University

John E. Readence
University of North Carolina at Greensboro

According to the National Institute of Education (1975), "what teachers do is directed in no small measure by what they think" (p. 3). In their review of research on teacher planning and decision making, Duffy and Ball (1986) supported this view by arguing that teacher cognition is a critical and important aspect of teacher effectiveness. In particular, it is believed that teacher decisions are greatly influenced by their personal beliefs or theories about teaching and learning. Therefore, a major aim of research on teachers' cognitive processes is to develop a deeper understanding of why and how the teaching process works as it does (Clark & Peterson, 1986).

In reading education, research has investigated whether teachers' personal beliefs about teaching and learning influence their decisions and actions. One position supports the relationship between teachers' thoughts and their instructional planning and behaviors. As Harste and Burke (1977) stated, "Teachers are theoretical in their instructional approach to reading" (p. 32). This premise was supported by Rupley and Logan (1985) who concluded that elementary teachers' theoretical orientations about reading can influence their instructional decisions.

However, later research by Kinzer (1988) led to different findings. In his study, Kinzer compared elementary preservice and inservice teachers on their theoretical beliefs and instructional decision making to determine whether the absence or presence of classroom experience influenced their thoughts. To identify the teachers' orientations, Kinzer developed two instruments: the first targeted how one reads and how reading ability develops; the second targeted sample instructional lessons. All instruments encompassed three orientations, based on models of reading: *text-based* (Gough, 1985), *reader-based* (Goodman, 1985), and *interactive* (Rumelhart, 1985).

According to Kinzer (1988), a text-based orientation assumes that meaning resides in the text and that the reader must make meaning from the text. A reader-based orientation assumes that meaning resides in the reader and that the reader brings meaning to the text. An interactive orientation assumes that meaning resides both in the text and in the reader and that the reader uses prior knowledge along with the text to make meaning. To validate the instruments, Kinzer used a two-step procedure: (a) two elementary school teachers independently confirmed the instruments' appropriateness for the elementary level; and (b) two graduate students in reading, also former teachers, independently confirmed that the instruments reflected the orientations intended by the developer (96% agreement).

For the first instrument, Kinzer (1988) presented the teachers with a series of statements on how reading takes place and how reading ability develops. Based on their responses, he classified their orientations as either text-based, reader-based, or interactive. For the second instrument, Kinzer designed three sets of lesson plans, one each in the areas of syllabication, vocabulary, and comprehension; lessons in each set represented the three orientations. Again, based on the teachers' responses, Kinzer classified them as holding one of the three reading orientations.

Based upon his findings, Kinzer (1988) concluded that, although preservice and inservice teachers were likely to share the same theoretical orientations, inservice teachers' beliefs tended to be more inconsistent with their instructional choices. Other researchers (e.g., Duffy, Roehler, & Johnson, 1986) had previously supported Kinzer's findings by arguing that the environmental realities of the classroom may cause teachers to disregard their belief systems.

The present study attempted to extend previous research findings by addressing the consistency between Chapter I reading teachers' theoretical orientations and their relationship to their instructional planning and practices. Chapter I, a federally funded compensatory education program for educationally and economically disadvantaged students, serves approximately 90% of our nation's schools. Researchers (e.g., Allington, Steutzel, Shake, & Lamarche, 1986) have argued that the program has not successfully achieved its original goal of fostering the reading development of the children it serves. That is, instruction has not always appropriately addressed student needs.

Given these findings, the purpose of the present study was to investigate Chapter I teachers' thoughts and actions. Specifically, the research questions of this study were: (a) Is there consistency between Chapter I teachers' beliefs and their instructional planning? (b) Is there consistency between the teachers' instructional planning and their instructional interactions with students (the interactive phase of teaching)?

METHOD

Participants and Setting

Twenty-three Chapter I teachers who taught in the same school district located in a large southern metropolitan area responded to two screening instruments. These included: (a) a biographical survey and (b) the instruments described previously that focused on teachers' theoretical orientations about reading and instructional choices. Preliminary consideration for selection included diversity in educational and professional experiences, as well as theoretical orientations. However, although the researchers hoped to identify teachers who were consistently text-based, reader-based, or interactive across Kinzer's (1988) instruments, the only consistency found was for reader-based teachers. Therefore, based on the information obtained, four primary-level Chapter I teachers, including three females and one male, with reader-based orientations were purposively selected to participate in this study. Generally, these reader-based orientations emphasized the significant role of prior knowledge in reading, particularly focusing on predicting, understanding, and interpreting text, as well as a whole-language approach to reading and learning in the classroom. A brief description of each teacher follows.

Teacher A. Among the possible participants, Jim had earned the highest degree, an Educational Specialist. His graduate work had been completed at a major research institution under an established reading researcher. Additionally, Jim had 5 years of teaching experience, 3 of which were as a Chapter I reading teacher. Although this school used a traditional basal approach for reading instruction, Jim had initiated and participated in several programs that focused on the reading of literature.

Teacher B. The second teacher, Mary, had earned a master's degree in elementary education in 1973, and her most recent graduate course, completed in 1985, focused on the language experience approach to reading. Mary, a veteran teacher with 25 years of teaching experience, had been a Chapter I reading teacher for 13 years. A traditional basal series was used by all teachers for reading instruction at her school, along with a library enrichment program.

Teacher C. Emily had earned a master's degree in reading education in 1972, which was also the year of her last graduate course in reading education. Emily was a veteran teacher with 22 years of experience, 8 of which were as a Chapter I reading teacher. The school's reading program, a traditional basal approach to reading instruction, focused primarily on the learning of isolated reading skills.

Teacher D. Deana had earned a master's degree in reading education in 1983, the year of her last graduate course in reading education. Deana had 15 years of teaching experience, with 13 years as a Chapter I reading teacher. Unlike the other participants, she taught at a school that was nontraditional in that it used a whole-language approach to instruction.

Procedure

After each participant was selected, one pull-out class of 6–10 students was randomly chosen from each teacher's schedule to be observed as the students received Chapter I reading instruction. Observation included 10 separate instructional sessions for each teacher. One of the researchers collected data by means of handwritten field notes and audiotapes of instructional interactions and by obtaining relevant teaching/learning materials (e.g., lesson plans, worksheets, and supporting aids). At the conclusion of each observation, the researcher also held a brief interview with the teacher about the teacher's perceptions of that day's lesson.

All data were analyzed using Miles and Huberman's (1984) concurrent flows of analysis: data reduction, data display, and conclusion drawing/verification. In this recursive process, the data were analyzed in ordered and unordered matrices by a research team consisting of the researcher and two trained doctoral students with expertise in reading education. Data sources were triangulated to control for biases from other sources. The final interpretation was achieved by searching for meaningful patterns across, between, and within participants, involving multiple perspectives of the research team.

RESULTS

The following discussion of the results is organized around the three research questions.

Question 1. Is There Consistency Between Chapter I Teachers' Beliefs and Their Instructional Planning?

Teacher A. For Jim this question was difficult to answer because he did not keep written lesson plans. However, Jim's reader-based belief tended to be consistent with his statements concerning his preactive planning, for his intention was to involve his first-grade learners in holistic experiences with print. Specifically, Jim used books as his curriculum. As he stated: "The books I have are my lesson plans . . . we read (a story) and write about it . . . and we deal with things as they come up (during instruction)." Additional interview data revealed that Jim's rationale for using trade books was consistent with a reader-based explanation of reading. As Jim stated: "I'm trying to have everything remain connected . . . I'm not going to break everything up into individual reading skills."

Teacher B. Although Mary's view of reading stemmed from a reader-based explanation, her preactive planning reflected a text-based explanation. During interviews, Mary emphasized that: (a) she focused on the teaching of isolated reading skills, and (b) the skills she taught her second-grade students were the skills that were to be on the state-mandated achievement test as well as a part of the school's basal reading program.

Teacher C. As with Mary, there was inconsistency between Emily's reader-based relief and her preactive planning, which favored a text-based explanation of reading. It was learned during interviews that Emily planned instruction that reinforced the regular classroom teachers' skill-based instruction and prepared her third-grade students for state-mandated testing. As Emily stated: "I decide what I want to teach from the teachers telling me what they would like for me to work on."

Teacher D. Overall, Deana's reader-based belief was consistent with her preactive planning. At times, however, Deana's planning reflected a text-based explanation of reading; for example, she used flash cards to teach the meanings of various prefixes. The inconsistency was due to the stated need to: (a) prepare her third-grade learners for state-mandated testing and (b) re-administer the school district's test of the basal reading series. It is important to note that although the school used a holistic approach to instruction, the students were still required to take the basal tests. Typically, when Deana was not constrained by the need to prepare her students for testing, her planning focused on engaging her learners in holistic experiences with print.

Question 2: Is There Consistency Between the Teachers' Instructional Planning and Their Instructional Interactions with Students?

Teacher A. Although Jim's statements relating to his planning reflected a reader-based explanation of reading, his teaching during the interactive phase favored a text-based explanation. Typically, Jim directed the choral reading and discussion of children's stories. After a shared reading activity, Jim guided his first-grade learners as they engaged in a writing activity that pertained to a story read. During the writing exercises, Jim placed much emphasis on the correctness of spelling and the appropriate use of grammar rules.

Teacher B. Mary, who used instructional activities that reinforced her school's skills-based reading program, consistently followed her detailed lesson plans during the interactive phase of teaching. Using skillbooks and/or worksheets, it was typical for Mary to begin her lessons by asking questions and/or presenting material that tapped her learners' prior knowledge. However, after an initial introduction, her lessons tended to be teacher-generated and skill-specific. For instance, during one teaching episode Mary began by asking, "Can you think of times in which your listening might save your life?" Following the introduction, the learners engaged in a teacher-directed listening activity.

Teacher C. Emily, whose lesson planning reflected a text-based explanation, used teaching methods during the interactive phase that favored a reader-based explanation. Typically, she presented material that required her students to use their prior knowledge to set a foundation for learning. At one point, Emily explained her rationale for her approach by saying: "It builds upon their experiences, it makes (a story) more interesting, it makes it (a story) more meaningful to them." Further, as Emily instructed, she monitored her learners to determine their level of understanding of the material presented. It was typical, for example, for Emily to require her learners to read a passage of a skillbook, summarize it in their own words, and/or relate it to an experience, such as eating dinner at a fast food restaurant.

Teacher D. When Deana's lesson plans reflected a reader-based explanation, she engaged her students in meaningful experiences with print, such as the writing of a story that was student-generated. As she instructed, Deana encouraged students to participate and contribute their ideas to the holistic learning activities. However, on days when Deana focused on preparing her learners for state-mandated testing, instruction tended to be teacher-generated and skill-specific. For example, one day she taught grammar rules. At one point Deana explained that she abandoned her favored holistic instructional approach because the regular classroom teacher asked her to plan activities that prepared the students for the state-mandated tests.

DISCUSSION

Chapter I Teachers' Beliefs

The similarity of the teachers' responses to the screening instruments may have been due to the fact that all four, in varying degrees, had educational and professional experiences that emphasized reader-based instruction. Specifically, Jim and Deana were knowledgeable about the current movement toward whole-language instruction, and both had participated in research projects under established reading researchers who advocated this approach. Further, it is safe to assume that Deana's school's holistic approach to instruction greatly influenced her reader-based belief. As for Emily, she was an avid reader of a major reading education journal that generally presented research that focused on holistic instruction and, as a result, her belief system may have been influenced by her most recent graduate course in reading education that focused on the language experience approach.

Consistency Between the Chapter I Teachers' Beliefs and Practices

The following discussion is organized on a continuum indicating degree of consistency between beliefs and practices. Throughout the discussion a focus will be placed on constraints and opportunities that influenced the teaching process.

Teacher B. At the most inconsistent end of the continuum is Mary, whose reader-based belief was inconsistent with her preactive planning and her interactive decision making. Both instructional practices favored a text-based explanation. It appeared that the inconsistency may have been due to constraints placed on Mary by officials at the state and local school district levels. Specifically, the data analysis indicated that: (a) at her school there was a great deal of pressure to follow local and federal guidelines, (b) much emphasis was placed on the students' performance on state-mandated tests, and (c) Mary perceived that her role as a Chapter I teacher was to support the school's skills-based reading program.

Teacher A. Following Mary on the continuum is Jim. His reader-based belief was consistent with his stated preactive planning but inconsistent with his interactive decision making. The consistency was thought to be a result of Jim's knowledge of current research that supports whole language instruction, whereas the inconsistency may have been due to his failure to adequately plan so that he could put whole-language theory into practice. The results of the data analysis suggested that several factors influenced Jim's instructional practices. These included: (a) he seemed to have very little time to plan for instruction because much of his attention focused on the development of school-wide learning programs; (b) the cooperating teacher had very little, if any, influence on his teaching in the pull-out class; and (c) Jim's principal viewed him as a valuable asset to the school's academic success because of his extracurricular involvement. As a result, the principal rarely, if ever, transgressed on Jim's autonomy in decision making and thus he had the opportunity to carry out his role as a Chapter I teacher in a manner suitable to himself.

Teacher C. Next on the continuum is Emily, whose reader-based belief was inconsistent with her planning but consistent with her decision making. Two factors seemed to contribute to the inconsistency: (a) Emily believed that her job was to extend the basal reading instruction of the regular classroom teacher, and thus her plans reflected a text-based explanation; and (b) Emily's principal, in part, determined the success of the Chapter I program by examining test scores, and this may explain why Emily focused on preparing her learners for tests. The consistency between her beliefs and decision making, however, was likely due to Emily having the opportunity to select her own teaching methods and materials.

Teacher D. At the most consistent end of the continuum is Deana, whose reader-based belief was consistent with her planning and decision making, except when she was constrained by the need to prepare her learners for state-mandated testing. Specifically, the consistency was likely a result of her school's whole-language approach to instruction. In contrast, the inconsistency was probably due to policy constraints placed on the teaching process at the state and local levels. Interview data obtained from Deana suggested that she felt restricted by policy decisions made by people from outside her school.

Conclusion

Considerable variation existed between the Chapter I teachers' beliefs and instructional practices that pertained to planning and interactive decision making, even though they viewed the reading process similarly. It is thought that the differences that existed among the participants were a result of varying social, psychological, and environmental realities of the participants' respective schools that either created an opportunity for or constrained them from implementing their reader-based beliefs in their decision making.

Although the research may be limited because only four Chapter I teachers participated, the results generally confirm previous research findings (e.g., Duffy et al., 1986; Hatch & Freeman, 1988) which indicated that the environmental realities of the school may militate against teachers' beliefs. The results of this study provided a preliminary view of the consistency between Chapter I teachers' beliefs and their instructional practices; however, further reasearch is needed. Specifically, future research should include observing additional Chapter I teachers, extending the observational period, probing for more information concerning beliefs and ideal practices, as well as addressing the beliefs and practices of regular classroom teachers.

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BASALS, TEACHER POWER, AND EMPOWERMENT: A CONCEPTUAL FRAMEWORK

Karen F. Thomas, Mary Alice Barksdale-Ladd, and Rebecca A. Jones
West Virginia University

Between Fraatz' (1987) findings that "teachers are currently the preeminent wielders of power in public schools" (p. 191) and Shannon's (1989) contention that teachers are deskilled in teaching and planning reading instruction and have "relinquish[ed] some or most of their control over reading lessons and their work" (p. 92) lies the fact that teachers do have power but must become empowered. Teachers are neither the power brokers of reading education as portrayed by Fraatz nor the hapless disempowered victims stripped of control in determining their fate and destiny in public education as depicted by Shannon. Rather, teachers do have access to the greatest force which can empower them, knowledge. The question is: How can teachers gain the needed confidence in this knowledge which will allow them to become empowered in the delivery of reading instruction?

When teachers set out to teach a reading lesson, they typically begin by picking up a basal reader. The role of basals in reading instruction is extensive with an estimated 98% of all the teachers in the U.S. using basal series (Flood & Lapp, 1986). Teachers have reported that they rely on the recently published basal reading programs of the 1990s more than they relied on previously used basals (Barksdale-Ladd, Thomas, & Jones, 1990). Eisner (1985) states that curriculum textbooks such as basal readers hold a position of unparalleled importance in influencing teaching in the public schools. Despite this widespread use of basals, there is sharp criticism from educators. Goodman, Shannon, Freeman, and Murphy (1988) conclude that basal reading programs are rigid technologies fostering passive learning and teaching which compromise questioning and risk-taking as necessary ingredients in natural learning environments. Further, Shannon (1987) sees the use of basals as "an exchange between commercial materials that have power to teach and students who can absorb that instruction" (p. 314).

Comments such as Shannon's focus on teacher power, decision making, and planning in reading instruction. Widespread use of basals raises the issue of teachers' decision making in reading instruction. Do basals "make" decisions for reading teachers? Do basals erode teachers' power? Even teachers who admittedly knew that their students preferred nonbasal activities and who had the power to employ such activities have relied almost totally on the basal (Barksdale, 1989).

The notion of power in education is "neglected" and an "indelicate topic" according to Nyberg (1981). He states that "when power does become a topic [in education circles] it focuses on other people's power, rather than one's own" (p. 537). Nyberg presents two aspects of power. Person A exercises power over person B by: (a) getting B to do something B probably would not have done otherwise, and (b) preventing B from doing something B otherwise would have done. Both conditions are in accord with A's wishes (Nyberg, 1981, p. 540). Influence, however, differs in that Person A causes Person B to do something different but not necessarily accomplishing Person A's plans. Empowerment, on the other hand, calls for a person to effect change in herself/himself based on knowledgeable choices. Moreover, a sense of self-worth is inherent in empowerment (Holloway, 1990); therefore, control of another person is not an issue.

Borrowing from a political science framework of power and social institutions, we propose that teachers functioning as "street-level-bureaucrats" (Lipsky, 1980) have the power to control reading policy and instruction. That is, teachers have the power as those in daily contact with students to determine the kind of reading program which they feel would be best for their students (wishes of Person A) and engage them (Persons B) in chosen reading activities thereby meeting the teacher's goals for the students. Fraatz (1987) sees the highest level of power for reading teachers in their ability to plan and to set instructional agenda, saying "The teacher's right to plan is at the heart of the structure of power in the classroom" (p. 31). It is in planning that teachers identify goals for students and design instruction to meet these student goals.

Research on teacher planning, as part of the larger arena of teacher thinking, "is not sufficiently mature" but still offers educators "insights that can help us see" the complexities involved in teaching (Clark & Yinger, 1987, p. 84). In planning, teachers determine and control what is valid reading instruction. It is this planning which allows teachers degrees of power and influence over student learning. Of specific interest to this paper is the teacher's ability to plan for reading instruction, the kind of planning that affords teachers ultimate power in reading instruction. To examine the issues of power, influence, and empowerment in reading classrooms, we sought to determine the role of basals and teacher power in reading instruction using and expanding upon the conceptual scheme proposed by Fraatz (1987). She delineated three aspects of power and influence in the public school setting: the *resources* people draw upon, the *strategies* guiding their use of resources, and the characteristics of the *school setting* that affect transactions. Fraatz' outline, adapted for our use, is a political/social scheme of power in public institutions placing the classroom teacher at the very center of power and influence in reading instruction.

In Fraatz' outline, resources refer to a teacher's available access to information about: instruction, district rules, educational/material resources, inservices, children's scholastic records, and new practices and technologies in pedagogy. In controlling distribution of human and material resources, teachers as classroom arbiters determine who gets assigned to what reading group, how much time is devoted to what particular knowledge, which group gets how many worksheets, who gets the teacher's time and attention, as well as who gets what instruction. Additionally, teachers can reward certain groups with more or less reading time, as well as tangible rewards for completing predetermined reading goals. In issuing sanctions, teachers can withhold library privileges, recess time, and tangible rewards from students who do not achieve teacher or basal-determined goals. Moreover, the teacher has ultimate control in grading students. Finally, under resources, it is a reading teacher's planning that sets the instructional agenda for his/her class giving teachers a measure of power their students lack (Fraatz, 1987).

To carry out the planned instructional agenda, teachers employ the following strategies: threatening sanction or rewards, persuading, bargaining, and negotiating. For example, teachers can persuade students to read *x* number of pages and negotiate some special favor that may or may not be reading related.

The contextual feature characteristics are found in the classroom's social context which makes possible the teacher's power and influence. Students are dependent upon teachers to give meaning to their classroom instruction and existence. For example, teachers make meaning of the importance of mastering such reading behaviors as finishing *x* number of worksheets on phonic generalizations or demonstrating some mastery of a comprehension strategy. Therefore, the incentive offered to accomplish these tasks has meaning. Students' dependency upon the teacher to structure meaning makes the issuing of incentives and teacher power possible. Autonomy also allows some modicum of power and influence. The final contextual feature, proximity, refers to the number of contacts between teacher and students and availability of reading material to conduct reading instruction.

Although the conceptual framework described above delineates particular instances and settings showing teachers to be quite influential and powerful figures in the classroom, there are constraining features that tend to significantly affect teachers' decision-making policies. Fraatz (1987) offers two features of classroom instruction that tend to influence teachers' instructional practices: collective instruction and professional uncertainty. Under collective instruction, teachers teach substantive numbers of children, often overwhelming to teachers as they desperately try to individualize instruction. In professional uncertainty, teachers' professional knowledge is underscored by the fact that no one knows exactly how children learn to read or how to best teach them to read.

To deal with these mitigating effects on teachers' power and empowerment, teachers pursue the following coping techniques: routine and control (Fraatz, 1987). Teachers seek materials and instructional practices that establish classroom routines providing them control with as much power and influence as necessary to meet their perceived role as reading instructor.

Given the framework of power and influence under which teachers operate, the constraining features mitigating their power and influence, and the coping techniques they adopt, we contend that the popular and widely used disempowering basal is the object of choice allowing teachers to function in the reading classroom. However, if the delivery of classroom reading instruction is to improve, teachers must become empowered in planning for instruction which will meet students' needs (Maeroff, 1988; Winograd, 1989).

Teachers, administrators, educational policy makers, and teacher educators need an understanding of existing frameworks of power and influence for appropriate changes in preservice education and system policies to occur. These changes can then lead toward empowering teachers in reading instruction. To examine existing frameworks of power and influence in the delivery of reading instruction, this study was designed to qualitatively investigate teacher use of basal reading programs in terms of Fraatz' (1987) model. We interviewed teachers who had just completed the 1989–1990 school year using a new 1990 basal reading series. Our examination focused on teacher planning using these basals, an area where we expected that issues of teacher power, influence, and empowerment would surface.

METHOD

Participants

Twelve elementary teachers (11 female and 1 male) with teaching experience ranging from 4 to 25 years took part in the study. Seven taught in rural school districts in a small mid-Atlantic state and 5 taught in a suburban district just outside a large city in a large mid-Atlantic state. The rural school district encompassed a small middle-class university town stretching to several outlying rural schools of a lower middle-class to poverty level population. The suburban school district schools stretched from one lower middle-class school adjacent to a lower-class section of a large northeast metropolitan area to the other five schools whose population comprised a middle to upper middle-class populace. All volunteered to participate in the study and each teacher's name has been changed to protect confidentiality (see Table 1).

Procedure

Data were collected during May and June, and we interviewed each participating teacher for a period of 1 to 2 hours with an open-ended and semistructured question format. Teachers were asked to discuss their perceptions and beliefs about their use of the basal in reading instruction as well as their planning strategies for reading instruction (see Appendix A for question format.) After each interview, the researcher recorded perceptions and proceedings in a journal.

Teachers mentioned many other issues related to reading instruction that were not specifically addressed in the question format, and interviewers asked participants to elaborate on these points. This allowed for a richer data base, providing further insight into teacher thinking and reading instructional practices. For example, many schools are currently struggling with the issue of initiating whole-language programs, questioning the role of basals and teachers in this endeavor. Several statements alluded to this struggle, providing an insight into teacher feelings and opinions in this matter.

Analysis

Each participant's interview was transcribed and read several times by each researcher, as were all journal entries, thereby beginning the consensus process. Researchers then met to determine and define idea units. An *idea unit* was defined as a concept related to reading instruction or learning to read. A *concept* was defined as a thought stated by a participant in the study which represented one of the following; a fact, a feeling, a belief, an opinion, an action, a reason, a description, a want or need: a trait, a relationship, a wish or hope, a cause, a result, a way of doing

Table 1

Teacher Information

Name	Number of Years Teaching Experience	Grade Level Taught	Degree	Gender	School Setting S.E.S.
Peggy	12	2	M.S.	F	Rural, Lower
Cindy	24	6	M.A.	F	Rural, Lower
Bill	11	2	B.S.	M	Rural, Lower
Debbie	7	3	M.A.	F	Suburban, Middle
Helen	3	1	B.S.	F	Suburban, Middle
Deidre	5	2	M.A.	F	Rural, Lower
Joanna	18	4	M.A.	F	Suburban, Upper-Middle
Nicky	10	4	M.A.	F	Suburban, Upper-Middle
Kammi	2	K	B.S.	F	Rural, Middle
Pauline	25	1	B.S.	F	Suburban, Middle
Reesa	20	3	M.A.	F	Rural, Middle
Darlene	9	5	M.A.	F	Rural, Lower

something, or an example or incident. In the initial data analysis meeting, researchers examined transcripts and collaborated on the segmenting of text into idea units. Later, researchers checked intercoder reliability on segmentation with a result of .87.

After each transcribed interview had been segmented into idea units and each idea unit placed on an index card, researchers met and began placing idea units which expressed similar concepts in like domains. Idea units were double coded when appropriate. Eleven predetermined domains were borrowed from Fraatz' (1987) conceptual framework previously discussed under resources, strategies, and contextual features. In addition, where idea units did not match Fraatz' (1987) framework, they were coded in separate domains based upon common characteristics. The primary category of idea units which related to but did not match Fraatz' (1987) framework involved empowerment issues. Idea units which dealt with teacher opinions, beliefs, and perceptions about the basal reading program are reported in Barksdale-Ladd, Thomas, and Jones (1990). After all idea units had been independently placed into the domains, researchers met to check intercoder reliability. We found intercoder reliability to be .93 (Yin, 1987) on the categorization of a total of 1,000 idea units within domains. The remaining idea units that did not fit Fraatz' outline for power and influence in reading instruction (e.g., data generated regarding description of basal and basal materials, comparisons between new and old basal series) were substance for another paper regarding basal instruction (see Barksdale-Ladd, Thomas, & Jones, 1990).

In the results, we substantiate the conceptual framework by using quotes to illustrate and corroborate our contention of teacher power and lack of empowerment in reading instruction. We shared a rough draft with the participating teachers, and although they found no misrepresentations, they indicated that they would like to make some changes in their approaches to reading instruction.

RESULTS

Resources

Included in this subtopic of kinds of resources are the following: (a) teachers' knowledge about instruction, (b) knowledge of school district rules, (c) availability of educational resources, (d) knowledge from professional journals, (e) inservice/staff development updating information, and (f) knowledge of students' reading profiles and backgrounds (easy access to student folders, tests, anecdotal teacher comments, etc) All 12 teachers, representing three different basal series, had similar comments regarding the access to material sources. There was no lack of material. One teacher, who initially had a negative reply to the question regarding availability of materials accompanying the basal, did not seem to realize all she had. Reesa commented that ". . . there is quite a bit you can choose from . . . . There's a lot to select from that will meet the needs of various children," whereas Deidre stated that "There's plenty . . . that come with the series . . . in fact, sometimes more than when we even get to, you know, use . . . more than you need."

We found ready access to and availability of basal-related reading materials for these 12 teachers as well as all teachers in their schools. In addition, there were cases in which teachers had further control over getting more materials. Cindy indicated that her principal had extra money to share with his faculty for additional materials ". . . recently he [principal] sent a paper around saying that there were extra funds and if there were any supplemental materials that we needed, let him know." We noted that rural teachers worked in schools with fewer supplemental materials available than in the suburban schools; however, both rural and suburban teachers indicated that a variety of materials accompanied the basal.

In addition to availability of reading materials, teachers reported that they had access to inservice training and staff development for reading instruction. Pauline recounted that "we were introduced to it [basal series] by another group of teachers who [conducted] inservices at the beginning of the year so we went there and they answered all our questions. Our Chapter I reading teacher is 100% behind this . . . so she's extremely helpful."

Not only did all teachers have access to inservice help from fellow teachers, basal company representatives, and Chapter I reading specialists, in all cases, the teachers selected the basal that they were using. In fact, of the 12 participating in this study, half of them were on the textbook selection committees in their schools. Participation on committees was voluntary. For those teachers not serving on the committees, their input was solicited for basal selection.

In controlling the distribution of human or material resources, teachers controlled assignment of students to groups, students to materials, teacher-time to individual students and groups, and types of knowledge to students. Also, as a matter of policy, teachers overrode test results in placing students in groups. In response to questioning about grouping, teachers asserted great power and influence. Debbie allowed that "we can move students from one group to another. Yes [we have power] to go [to the reading specialist] and say . . . this student does not belong here . . . we can reveiw test scores, and if she [reading specialist] feels it's a major discrepancy . . . we would move them to a higher group or drop them to a lower group . . . . Teacher comment, more than tests, determines group assignment."

Teachers also indicated that they have control over which students get certain kinds of special instruction. "I had one student this year, in second grade [who] could not read . . . and I worked with him, you know, individualized vocabulary, [etc.]. He is being tutored . . . I got him [a tutor] . . . and he doesn't have any trouble reading this book now" [Deidre].

In addition, teachers control what knowledge, skills and activities will be made available to their students. For example, in one case daily journal writing was recommended by the basal, but Deidre chose not to include it in reading instruction, saying ". . . we have what is called a writing portfolio and the kids are to write every day, creatively. . . . Every day these kids should have their writing portfolio out and write in something like a journal. . . . And I don't get to that." The inclusion and exclusion of what knowledge or instruction students get revolves around how teachers plan for reading instruction.

Planning

Of all the interview questions, the ones regarding how, where, when, and why teachers plan provided the richest set of data. The data, however, indicated a singular approach to planning for reading instruction in that every teacher, when asked to demonstrate how reading instruction is planned, turned immediately to the basal as the genesis for planning. All 12 teachers relied totally on the basal for planning reading instruction. Helen remarked that "beside[s] spelling . . . this [reading basal] is probably the only subject I teach that I really go right by the book." Joanna replied that "We are 100% dependent on the basal . . . . We use it every single day."

Teachers' responses to questions about how they would plan for reading without the basal were most telling. Deidre admitted, "If I couldn't use the basal . . . I would be shocked at first. I would be asking myself what am I supposed to do, what am I supposed to do?" Helen interpreted the question as applying only to her current (1990) basal saying "I would probably begin [planning for reading] by looking at an old [before 1990] teacher's edition that I had of a basal series." Also, Helen stated that she would ". . . try to get some guidelines from my principal as to what the kids should know . . . ." Kammi also looked to sources outside herself, "I'd want to know what I was required to teach, how much they [students] should know before they went into the next grade. I would need to know that." Nicky's reply summed up her feelings of planning for reading instruction without a basal in one word, "Panic." Bill allowed that he could do a good job without student basals if ". . . I could have a teacher's edition book . . . ." Eight teachers responded with this idea of going to an "old" copy of a teacher's edition of a basal. The next most common choice in planning for reading instruction (4 teachers) involved making lists of skills for the students. Pauline stated that ". . . I . . . would start out with very strong phonics, using those letter-sounds to make it work to read words."

So, without exception, the basal was the instrument of choice for planning reading instruction for both large and small group instruction. Most teachers (10) spent most of their planning time at home while school time was used to run off materials. Reesa stated that ". . . my reading [planning] is done at home during the evening . . . my planning at school [is to find] my materials and get it ready."

All teachers did report stepping outside the basal to give their students what the basal did not provide or did not provide in the amounts teachers deemed necessary. Pauline compensated for what she determined as a neglected area in the basal by using her own materials. "I use my basal as my planning, but as you can see all these phonics skills that I have here [displayed] are all on my own." Another view of planning had teachers (5) writing plans for use with substitute teachers as indicated by Debbie, ". . . my lessons plans are designed for the benefit of a substitute . . . so if a sub walks in here [she] knows what we are doing."

A few teachers, (3), discussed year-long planning. This involved having the books over the summer and fitting all basal stories into a year's time frame, allowing space for adding to plans during the year. ". . . I plan a whole unit ahead but not day by day like they do in the book. I sort of write my lesson plans on a big continuum with no days written beside it . . . so I have a skeleton plan for each unit ahead of time for this year . . . so next year I'll have a nice full lesson plan to start out with" [Bill]. Deidre added ". . . my lesson plans are done for the year. I don't dwell on the lesson plans. Lesson plans are for your sub. I mean the lessons are right there in my manual so when I open my book I know what to teach."

Only two principals collected lesson plans in an advising and consulting role. What teachers decided to include, how much to include, which lessons to leave out, how much time to devote to any one activity, and even how to plan, were all left to the discretionary powers of the teachers. The reasons that the teachers gave for planning centered around four basic ideas: (a) to fit the proper amount of time allotted in the days' schedule, (b) to make sure there were enough materials to cover the lesson or activity selected, (c) to be organized, and (d) to reduce uncertainty through control.

Strategies

The three strategies, (a) threat of sanction or promise of reward, (b) persuasion, and (c) bargaining and negotiation, are intertwined and work in concert in the classroom as teachers employ these controls in the course of reading instruction. Cindy explained what was tantamount to a reward saying that ". . . and some days I will just put things aside and say, "We're going to have sustained silent reading . . . in a reading period because I know these kids like to read . . . and we'll just spend the time reading what they want to." Students also negotiated in reading classrooms. An anecdote related by Cindy told of a fourth-grade teacher whose children loved to read stories and who questioned all the skill worksheets and workbooks that they had to do. "That sent a message to her [the teacher] that said maybe we just better put this book [basal] aside and so she got a novel and they are all reading that novel and discussing it." Sanctions were issued also, as in Darlene's classroom: "I have a reading record [log] and they [students] are required to read X minutes every night . . . and their parents are to initial it the next day. When they bring it in they have their choice of different kinds of [rewards] stickers, that type of thing. Now, if they don't bring it in 2 days in a row, then I make them go to detention and read for 15 minutes."

We found similar classroom examples across all 12 teachers' comments. These strategies seemed to be a fairly stable part of reading instruction and were commonly practiced.

Contextual Features

The meaning teachers attach to reading practices and exercises results in incentives offered students, thereby allowing teachers influence over how students view that work. Grading, often the ultimate incentive, determines the importance of certain reading assignments. Deidre attached special meaning to the completion of skill sheets so that she could determine grade points: ". . . I think we need it [skill sheets accompanying basal series] because the way the program is set up, they [basal] don't want me to take a grade on the workbook. This [workbook] is practice. They [basal] want me to take grades from here [skill sheets]." Hence, special meaning attached to skill sheets influences how the children work at these tasks. In contrast, some teachers do not attach much meaning to certain aspects of the basal series and exercise power in deciding not to grade some components as in Reesa's case: "I don't feel as though the criterion tests are like they should be. I don't feel that they're a real indication for what the child has learned, so I don't base a lot on those."

Children's dependency upon these teachers' decisions to make meaning of all the reading materials in their classrooms also indicates the degree of autonomy these teachers have. Cindy related the following, "Whether that [a particular reading practice] goes over well with the school system or whatever, nobody [in administration] has ever said anything to me about that . . . but there's no problem with that [administrative control]." Additionally, all participants expressed degrees of autonomy in that some of the teachers were using materials and self-selected books other than the basal series, albeit in concert with the basal, not in place of it.

Empowerment Issues

All participating teachers made statements which reflected empowerment issues. Idea units which were coded in this domain included concepts about the degree to which these teachers had confidence in their knowledge about reading instruction and confidence in their abilities to make decisions and take actions based upon their personal knowledge. Teachers' comments indicate a lack of teacher confidence in personal knowledge regarding reading instruction with statements referring to an omniscient "they" (i.e., basal authors) as the teachers of reading. The following statements cut across all 12 participants: "what they emphasize [in teaching reading]," "how they approach reading," "what they suggest that we grade," and "what they want us to do." Exemplifying another disempowering concept, all 12 teachers referred to the basal also as teacher with such phrases as "it teaches science, social studies, and health," "it teaches vocabulary," and "it teaches paraphrasing." Debbie summed up what all the other teachers had implicitly or explicitly stated, "they [basal publishers] have experts working on these basals that probably know a lot more about reading than I do."

DISCUSSION

Although, for the most part, teachers presented themselves as the agent of power and influence in reading instruction, they abdicated their power to the basal. Peggy recounted: "I do what I want to do [in reading instruction] but I do it in the order that the basal suggests." This quote was in response to the question regarding which was most powerful in reading instruction, the basal or the teacher's decision making. Although all 12 teachers stated that they were the most powerful agent in reading instruction in their classroom, all also stated that they relied anywhere from 90% to 100% on the basal. This may best be described as teachers having power but not being empowered.

If Fraatz' definition of power (i.e., the right to plan is the heart of power for reading instruction) is valid, then teachers do have power. However, if planning involves "deciding" to follow the teacher's edition of the basal which spells out a very definitive, prescribed, and predetermined set of reading goals, activities, and worksheets, then teachers appear to have no power over reading instruction. We can only assume that teacher belief systems guide this decision-making process. It is this belief system that addresses empowerment. Because all teachers reported supplementing the basal in certain areas or using other activities to replace certain basal areas, teachers did demonstrate empowerment in deciding to step outside the basal for practicing what their belief system allowed. Unfortunately, teachers did not go beyond those few basal areas they questioned to further question *all* predetermined objectives, thereby demonstrating they knew what their students needed for literacy instruction. We maintain that teachers use the basal to plan literacy instruction because they do not know, are not sure, and cannot accept the idea of professional uncertainty (i.e., we really do not know *one* best approach to literacy instruction for all children.) This abdication to the basal indicates lack of empowerment. However, we cannot say that these teachers were completely stripped of power and thereby in collusion with textbook companies as Shannon contends. Teachers are truly uncertain in areas of reading knowledge as to what constitutes some of the more current and researched literacy practices; therefore they defer to the basal. This lack of knowledge tends to mitigate their empowerment, their confidence in trying what's new.

Although many teachers are held accountable for reading test scores, use of certain materials, and state-mandated learning outcomes, knowledgeable (and thus empowered) teachers realize that there is a variety of ways to accomplish these legislated learnings. "I would say my own decisions have more power [in conducting reading instruction]. . . . The fact [is] that I am the one who truly knows my kids. I know what they already know" [Helen]. When teachers spoke in these terms they voiced a knowledge about learners in terms of empowerment. Unfortunately, they were not able to sustain this voice in their delivery of reading instruction.

To sustain this voice, empowered teachers must discover their students anew every year. Teachers must determine what is best for his/her students's reading needs, not only yearly, but monthly and daily. This entails risky moves away from controlled and prepackaged reading goals and exercises. Important to the concept of empowerment is the knowledge that professional uncertainty is a fact of teaching. It is all right to admit that we do not know how all children learn to read. However, we must then be current in literacy research and practice to try to discover with each class the limitless solutions to the puzzle of literacy acquisition. Empowerment means teachers experimenting together on a foundation of "collaboration and cooperation involving the provisions for people to do things together, [such as] talking together, and sharing concerns" (Lieberman & Miller, 1984, p. 16). In exploring why teachers may have power but not necessarily be empowered, we naturally turn to teacher education.

How we, as teacher educators, prepare teachers has much to do with whether teachers view themselves as empowered professionals. Do we give preservice teachers a body of knowledge that forms the knowledge base for effective reading instruction? Do we adequately prepare them for how children learn? Do we model mentoring, collegiality, collaboration, reflective planning, by presenting teaching situations that call for flexible and diverse decision making? Do we educate principals, supervisors, superintendents, and other school managers in educationally sound leadership models that share decision making and planning for educating children? Perhaps the same fragmentation that we so decry being practiced in public classroom reading instruction is still practiced in teacher education classes.

The conceptual framework proposed by Fraatz can be altered to include all the people and components that share in educating children. This framework can be changed into a conceptual framework for empowerment. Empowerment means teachers, teacher educators, parents, students, principals, supervisors, and administrative personnel collectively sharing, and negotiating, not telling nor dictating instruction. We propose the following model adapted from Fraatz' model (see Table 2).

This framework demonstrates that empowered teachers share power and, in turn, empower students to grow and become independent readers. Together, in empowered classrooms, teachers and students explore learning to read daily. Rosow (1990) defines power by alluding to change, "Power is having the strength and ability to design [reading programs] from conventional givens and the courage to let the answers change

Table 2

Model of Empowerment

TEACHERS, PRINCIPALS, PARENTS, STUDENTS, SUPERVISORS, STATE EDUCATIONAL POLICY MAKERS		
1. Sharing resources	2. Negotiating strategies	3. Determining contextual features
a. Access to information	a. Threats of sanction, promise of reward	a. Dependent independent relationships
b. Distribution of human & material resources	b. Compromising	b. Shared experiences
c. Control of rewards and sanctions	c. Bargaining and negotiation	c. Incentives
d. Planning		d. Proximity

over time (p. 26).'' This kind of exploration necessarily takes the teacher away from safe and prepackaged drills. This is risk taking that can lead to powerful learning.

Rosow (1990) implied a confidence which we found lacking in most of our participants. Our participants looked outside themselves for confidence, turning instead to the basal. How do teachers become confident in knowledge that allows them to discover reading anew every year with each new student? Perhaps further research can address this issue by studying empowered teachers. How did empowered teachers get their confidence? How can teacher educators teach/share empowerment? Studies such as these may help free teachers from the rigid technological management inherent in programmed reading instruction so that they can focus on *what* and *why* in reading instruction, questioning it anew every day.

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APPENDIX A

Interview Questions

1. Tell me about the role of the basal series in conducting your reading instruction.
2. Are there materials or activities that you have used in addition to the basal in conducting reading instruction? Tell me about them.

3. To what degree would you say that your classroom reading instruction relies on the basal. Explain, please.
4. Describe, please, some of the principles upon which you think good reading instruction should be based.
5. How are your perceptions of these principles altered (or not) as a result of this basal series?
6. To what degree does the basal reading series have power in influencing your classroom reading instruction? Share your views of this phenomenon, please.
7. What do you think has more power in influencing reading instruction in your classroom, suggestions in the basal or decisions that you make in planning for reading instruction? Discuss this, please.
8. Why do you think that the basal is such a powerful source of influence in classroom reading instruction?
9. Describe, in general, how you go about planning for reading instruction.

   *Take a few minutes to plan reading lessons for me, using the materials you would normally use, while explaining to me what you are thinking and how you are deciding exactly what you will do.

   *How do you plan for daily, weekly, monthly, term reading needs?

   *What is most influential in your planning? What guides your planning for reading instruction?

   *When and where do you plan?

   *How do you plan for meeting individual needs in reading?

   *How do you plan for group instruction? Large? Small?

   *What are the most important considerations for you in planning for reading instruction? (Interviewer listed on index cards.) Please rank order these considerations and tell why you ranked as you did.

   *How does this basal help you plan for reading instruction?
10. What would you do if upon arrival at school the first day, you were told that no basal series were to be used for the school year? Instead, you are to plan reading instruction yourself by doing what was in the best interest of your students. How would you feel? What would you do?
11. Are there ceilings/caps placed on grade levels of the basal so that your students may or may not go into the next level basal reader?
12. Is there anything else that you would like to share with me before we end the interview?

Probe questions were also included to clarify any of the above questions and also to clarify new issues that the interviewees may have raised.

PRESERVICE TEACHERS' CONCEPTIONS OF CONTENT AREA LITERACY INSTRUCTION*

Christine J. Gordon and Margaret Hunsberger
University of Calgary

The study stems from the researchers' experiences in teaching content area reading/writing courses and from literature which documents preservice teachers' resistance to the philosophical tenets and pedagogical practices undergirding content area courses (O'Brien, 1989; O'Brien, 1988; Ratekin, Simpson, Alvermann, & Dishner, 1985; & Stewart, 1990). Specifically, the purpose of the first phase of this longitudinal study was to determine the effect instruction in a content area reading/writing course had on preservice teachers' knowledge, attitudes, and beliefs from entrance to exit in the course.

Research has shown that factors that contribute to resistance to incorporating reading instruction include feelings of inadequacy, lack of confidence about effectiveness in reading and subject area instruction simultaneously, doubts that reading falls within the content area domain, and the belief that there is no need for content reading instruction (Gee & Forester, 1988; Gehrke, Schaefer, & Schlick, 1982; Ratekin et al., 1985; Schleich, 1971; Siedow, Memory, & Bristow, 1985). Stewart and O'Brien (1989) have also shown that teachers often exit content area courses with different, but more subtle and complex, misconceptions that contribute to resistance to content area reading instruction. These latter misconceptions stem from their knowledge and beliefs about the structure of secondary schooling (O'Brien, 1988) and from the power of and loyalty to content area disciplines (Ball & Lacy, 1984). Bean and Zulich (1990), using student-professor dialogue journals as a window, conclude that there is much variability in how preservice teachers integrate content area concepts with their own views of teaching. Based on findings from case studies, Bean and Zulich (1990) believe that "the competing forces of discipline and school-based cultures, as well as individual development, play uncharted roles in a preservice teacher's effort to function successfully within the profession" (p. 177).

The first phase of this research program addressed three main questions: (a) What changes occur in initial attitudes of preservice teachers towards teaching students to process text in their own particular areas? (b) What is preservice teachers' initial knowledge of the reading/writing process and what changes occur in that knowledge while preservice teachers are enrolled in a course on content area reading/writing instruction? (c) What is preservice teachers' initial knowledge of methodologies/strategies to teach text processing which can be integrated into their content teaching plans? How does that knowledge of methodologies evolve/change?

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METHOD

Participants/Setting

The participants were 50 University of Calgary students enrolled in a compulsory undergraduate secondary education course in literacy across the content areas. In the class, several of the content disciplines (e.g., fine arts, science, mathematics, physical education) were represented. All students in the class were earning B.Ed. degrees, but some had already completed another Bachelor's degree (e.g., B.A., B.Sc., etc.). None had teaching experience in the schools. The course spanned the academic year so that one practicum component fell in the middle of the year and one followed course completion. Classtime was evenly distributed among lecture, discussion and "hands-on-activities."

Data Collection/Procedures

Data were gathered through a variety of methods (students' journals, questionnaires, semistructured interviews of selected students, observations of mini-lesson teaching followed by student reflections, field notes, and attitude scales), so as to increase the probability that there were credible findings (Lincoln & Guba, 1985).

Upon entrance to and exit from the course, questionnaires were administered on attitudes toward and knowledge of reading and writing processes and knowledge of instructional methodologies. The questionnaires used a Likert-type scale, but students were encouraged to add comments which qualified or explained their choices.

Students were asked to write weekly journal entries. Most of the writing was free writing (open-ended writing) to encourage students to discover ideas, to respond to class presentations, discussions, activities or readings, to describe what they thought of content area reading and writing, and to describe how they felt and why. On four occasions students were assigned prompted writing: their first journal entry was to address (a) what they expected to learn in the course that would help them be a better teacher in their area of specialization, and (b) what they thought was their responsibility as a subject area teacher in helping their students read and write in the subject area. Another prompt (mid year) asked them to describe what the experiences of reading and writing were for them. The third structured entry asked them to reflect on their first round of practicum (student teaching) experiences, and their final entry was to reflect on their learnings in and views of the course.

Field notes were taken in selected class sessions. Interviews were used only on a selective basis, such as when elaboration on a journal entry was required, and at the end of each semester.

Data Reduction and Analysis Procedures

All field notes made by the researchers, journal entries, interview transcripts, lesson observations and introspections were considered with respect to their occurrence in the course and in relationship to each other. Data, particularly student journals, were read and reread by the researchers in light of the three research questions to identify emerging themes and trends through a constant comparative method (Glaser & Strauss, 1967). Through this method, both majority views and minority stances emerged. This approach does not lend itself to quantifying data but rather to giving insight into underlying reasons for views expressed.

RESULTS

Data analysis/interpretation support several key observations.

Observation #1

Some attitude change was evident from course entrance to course exit. At the outset the attitudes of many of the students towards the literacy across the curriculum course were somewhat less than positive. A few students, on the other hand, indicated either a neutral attitude or even one that indicated they might be receptive towards the idea that content literacy, or making their students more literate in their subject areas, was the responsibility of each subject area specialist. The examples below are representative of course entry attitudes.

> To be quite honest I don't know how valuable this course will be to me. My area of specialization is mathematics. This is a discipline that does not really deal in language but in numbers. A given problem, say $3x^2 + 6x + 4 = 0$, is not open to the ambiguities of language, nor the problem of interpretations. There is only one correct answer. (Devon, journal entry)

> To leave the responsibility to teach such methods and strategies in reading up to the subject area teacher may be asking too much. I feel that a unit should be done within an English course or the like. Specific subject areas should only make brief references to it or offer extra help to those that may feel the need. (Kyle, journal entry)

By course exit many preservice teachers had moved away from the notion that reading/writing were responsibilities only of the language arts/English teacher and were more accepting of integrating literacy instruction with content area teaching, although some of the physical education and art students felt that their subjects were, and should remain, exclusively activity oriented. A majority of subjects in the other areas of specialization were of the attitude that reading and writing in the content areas were a legitimate part of their teaching, with some qualifications. For example:

> This course has brought to my attention so many of the things I know about already but didn't think to use in my teaching strategy. It is as if my "own prior knowledge" has been sucked out and applied to many ideas about how students learn and how teachers should teach them.
>
> I admit that in the beginning, I had a few problems seeing the relevance of text

> books and reading/writing skill development in the art room. I think this is mostly due to my lack of reading and writing in my own art classes but it didn't take long for me to change my mind. (Diane, journal entry)

> What? What the hell is this? . . . and what the hell does this have to do with physical education? Teachers that I have talked to warned me about the theoretical "ivory tower" garbage that I would encounter once I entered the Faculty of Education.
>
> The above statement was probably very close to my initial reactions to this course. However, after the first couple of classes I said "Yeah, I can see where they're coming from . . . but still, I don't see how this can be implemented in a physical education class.
>
> After learning about many aspects of the reading, writing process and guidelines for helping students process text I began to see a more clear picture of how some of these techniques could be used in the setting of the gymnasium.
>
> All in all, I truly feel that I have picked up some very useful teaching strategies and principles to follow.
>
> I suppose the greatest benefit I obtained was a better awareness of what reading actually is and a better metacognitive awareness of my own reading. (Kyle, journal entry)

The data show attitude changes were tempered by reservations about teaching literacy across the curriculum. These included concerns (a) that this philosophy did not necessarily permeate curriculum guides in the subject areas, (b) time constraints did not permit the teaching of both content and process, (c) the beginning teacher may not be skilled in integrating all the information offered in the university course or know how to apply it in the junior or senior high subject, and (d) the content area teachers presently in school systems are not teaching this way and the cooperating teachers, in particular, might be uncomfortable with this approach. For example:

> As we go student teaching and are full of idealism and new things that we want to see and implement, we often get a rude awakening once we hit the real world of teaching. In my own experience I have found that most teachers do not spend a lot of time on process making or helping the students understand the text. Their primary concern is the content that they have to teach before the end of term or prior to the departmental exam. (Arthur, journal entry)

> I'm wondering about how to deal with all this information I've been given and make it apply. I think, "Oh God, there's no more that I could do in a classroom" . . . and I don't want to be doing anything the cooperating teacher is uncomfortable with either. (Theresa, interview data)

Observation #2

There was a shift, by course exit, from a bottom-up model of reading (i.e., emphasis on decoding) to a more interactive model. This acceptance included the belief that prior knowledge is an important variable in the comprehension process and meaning is constructed. That is, through reflection on their own reading experiences, preservice teachers came to view or to re-appreciate reading as less mechanistic and cognitive and as more experiential, affective and personally rewarding, although text type often was an important factor. However, a few science majors clung to the belief that there is only *one* right answer to a question. Generally speaking, fewer students viewed writing as a rewarding experience. These shifts in knowledge about the process of reading and writing are exemplified in the excerpts below:

> First of all that reading is more than linearly passing your eyes over the words. Secondly, there are a number of cognitive and affective aspects related, that have a big influence on the reading process. I think it's a pretty simplistic view that I came to the course with. In other words, that reading is basically looking at the words on the page and going through it. But we were trying to get alot further than that, into comprehension, which I suppose, when you stop and think about it, comprehension is, the object of reading. . . . I remember consciously saying, "The only way we can formulate an answer for this is to find it in the text." I remember purposely ruling out any background knowledge because I'd be bringing my biases to it and corrupting the picture, by thinking that the answer is in here somewhere if you read between the lines enough. (Brad, interview data)

> I can remember a time in my life when I was very interested in reading. It was in grade 7 or 8. I had discovered several fiction books . . . since then I can't recall reading much for pleasure . . . thanks for reminding me. I find the process of writing very difficult but . . . I have enjoyed writing in this journal and have actually found the writing process easier. . . . (Derrick, journal)

> Writing, sad to say, is less enjoyable than reading because there are not many leisure experiences associated with it. (Courtney, journal entry)

Observation #3

Students came to view writing as an opportunity to think through a concept. Students shifted away from an initial belief that thinking preceded writing and that writing was only to be used as a demonstration of learning. Use of the journal itself, in the literacy across the curriculum course, as a writing-to-learn activity served to modify preservice teachers' beliefs about writing. Other writing-to-learn assignments in the course also appeared to serve the same purpose.

> When I reach the end of a session of writing I find that the sequence of events I had envisioned has taken my ideas somewhere new that I did not anticipate on. I may begin writing on a topic with a direction but find the facts that occur and information I have presented has led me in a new direction that I could not see when I began. In other words the beginning of the text does not match the middle or the end of it. My first log entry is such an example. When I started writing I was going to state how I felt this course would be of little value and arranged my ideas to support that point of view. But found, as I wrote, that my view began to change as I considered each new idea I presented. Since this is a journal I didn't go back and rewrite the beginning, but rather left it to show you my thought process. Where you start does not always match where you end up when you write. (Devon, journal entry)

> I found that in the analysis and interpretation of the assignment (IRI) we could have gone on for another 30 pages applying ideas. This is truly writing to learn. By discussing one aspect you stumble upon another. (Kyle, journal entry)

Observation #4

By course exit, there was a shift away from teacher talk as a primary teaching method and a movement towards teaching which engages the students as active learners. Initially preservice teachers saw the "lecture method" as the most viable method of teaching with the "information giving" role of the teacher as central. Gradually the "hands-on" nature of class activities contributed to the recognition that involving students in reading/writing/speaking activities and having them assume responsibility for and ownership of learning promoted active learning, but that "teacher talk" promoted passive learning.

> Some typical comments to support the above observation include: I think a lot of students lack the ability to write. So I think once I get out, it's going to be something that's stressed. For example, there'a a process oriented thing to do with ratio and proportion that I learned in math methods and in that you have to do some solving and some experimenting, and then at the end it says, "If you were to explain this to a friend, how do you do it?" So, I'm going to get the students to do that. (Theresa, interview data)
>
> When I was studying for the exam in this class, I made a graphic organizer of the whole book. I did this just one evening but it really helped. (Courtney, interview data)
>
> One thing that was said today hit home with me . . . the fact that lectures are passive learning situations. Well, for me that is something that is important because I tend to talk alot. The last lesson I taught was on the use of symbols in church. I found myself wanting to answer all the questions that the students had and all the while there were students in the class that could have answered them just as well. (Nathan, journal entry)
>
> I am finding the in-class discussion extremely valuable because we are collectively exploring the ways in which our minds approach reading and writing. (Susan, journal entry)

Observation #5

The preservice teachers acquired a much greater awareness of teaching/learning strategies. The preservice teachers, nevertheless, still experienced some difficulty in (a) matching the appropriate teaching/learning strategies (e.g., KWL, QAR) with a particular skill to be developed (e.g., comprehension monitoring, asking and answering questions), and (b) applying their knowledge of instructional strategies to the needs of the students based on the texts to be read/written. As one example, when preservice teachers were asked to indicate what they might teach their students to help them make inferences while reading, some students indicated they would use the Guided Reading Procedure (GRP). The GRP could possibly assist in enhancing students' inferencing abilities if the following conditions had been met during instruction: inferencing questions were asked, students were shown how to integrate components in texts and how to integrate text and prior knowledge when answering inference questions. However, the GRP does not target inferencing per se. Similarly, other students stated that they would use the Directed Reading/Thinking Activity (DRTA) to help students to learn to read critically. There were obviously some matches between skill to be developed and strategy to be used, as for example the preservice students who indicated that they would teach Raphael's (1982) Question-Answer Relationships (QAR) to improve students' ability to formulate and answer questions to enhance general reading comprehension. It would appear that over the span of a one-half course, students did not have enough time to internalize and integrate their learnings.

Given a chapter or a portion of a chapter, some preservice teachers continued to have difficulty in applying their knowledge of instructional strategies to the needs of students based on a particular text. For example, given a text entitled "Problems among Soviet Satellites in Central Europe," a text replete with bold-faced technical terminology but containing definitions in parentheses, typographic cues, and contextual cues, some preservice teachers neglected to recognize the need for vocabulary development or the need to capitalize on the features of text when doing so. Instead their lessons were developed based on such strategies as SQ3R, QAR, or GRP.

One student gauged his learning in the course by reflecting in the final journal entry as follows:

> One thing that was an indicator that I gained some understanding from the course and its goals was that I could answer the questionnaires you gave us at the beginning and end of the course much easier at the end. I understood what each question was getting at, whereas at the beginning of the course I did not know what the question was about. (Ryan, journal entry)

DISCUSSION

At course entry our students, following a familiar pattern (Stewart, 1990), held attitudes that were largely negative, neutral at best, toward a compulsory course for which many did not see relevance. A major factor in influencing them to reconsider their views and reflect on the place of literacy in context area learning seemed to be getting them actively involved regularly and variously, for example: (a) a reflection through writing on their own experiences as readers and writers and their past school experiences, reflections which seemed to be a positive way of heightening their awareness of such processes; (b) active participation during class time in hands-on activities, such as reading and critiquing high school textbooks, using Smith-Burke's (1982) strategy of Extending Concepts Through Language Activities (ECOLA), and Ogle's (1986) strategy of asking oneself What do I know? What do I want to learn? and What have I learned? (KWL), and (c) weekly journal writing which seemed to provide for many students a lived experience of writing-to-learn. Some of them came to believe that writing-to-learn was possible only when they realized they were doing it.

Experience is a powerful teacher and the students were predisposed to teach as they had been taught. As observation #4 suggests, it is a long and gradual process of providing other models and examples to encourage shift away from reliance on telling as a method into building a repertoire of instructional strategies.

In examining why literacy across the curriculum has had a checkered history it seems important to consider the discrepancy between the ways in which university classes are taught and the culture and events of high schools (Bean & Zulich, 1990). Provision of practical applications and active involvements in university classes may lessen this distance, but there is still a significant gap for preservice teachers between the illustration of individual activities and the assembly of many concepts, strategies, and materials into a cohesive course of study for adolescents. This gap seemed to be bridged partly by reflection upon personal experience, past and present, most particularly including a serious examination of the student teaching experience. But an implication of this perceived discrepancy may well be consideration of alternative ways of delivering university methods courses. Possibilities include forming teaching teams with accomplished high school teachers, teaching some of the university classes in the schools intertwined with ongoing classroom activities, teaming with university colleagues who are subject specialists, and so forth. These alternatives may facilitate integration of strategies, objectives and content.

The work involved in teaching literacy across the curriculum courses seems to fall generally into two areas. There is the relatively straightforward matter of providing information and experience with methodologies, and there is the much more subtle matter of influencing attitudes and expectations by bringing past learning to a conscious level and helping students think clearly and sensibly about what they already know about reading, writing, studying, and learning. As one preservice teacher summed it up in her final journal entry:

> The key to using appropriate teaching strategies is to be *aware* of both available strategies and the students you work with. Because so much of the strategy selection is subjective and based upon your perceptions of what's happening in the classroom and how your students can be helped, a teacher must be on her toes with eyes behind her head, a sixth sense and boundless energy! I have often heard it said that a teacher will teach the way he/she was taught. I hope that I will teach the way I have been *taught to teach* using the many helpful tools I've picked up in this course. (Diane, journal entry)

The second phase of this long-term project will track six of the preservice teachers (from this Phase I) as they enter the teaching profession to examine the extent to which they implement literacy instruction in their subject areas within the context and constraints of the school and within their own conceptualizations of content area literacy.

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MOVING INTO LITERATURE-BASED READING INSTRUCTION: CHANGES AND CHALLENGES FOR TEACHERS

Patricia L. Scharer
Ohio State University at Lima

The growing popularity of using children's literature for reading instruction in today's elementary classrooms is evident not only in current professional publications (Bridge, 1990; Cullinan, 1987, 1989; Edelsky, Altwerger, & Flores, 1991; Routman, 1988), but in classrooms across the country as well. Research studies dealing specifically with literature-based reading instruction are just beginning to appear in the literature which inform questions in three areas: (a) the classroom settings which facilitate children's interactions with books (Mervar & Hiebert, 1989; Morrow, 1982; Morrow & Weinstein, 1986; Taylor & Frye, 1989), (b) the comparison of literature-based reading instruction and other instructional approaches in terms of reading achievement (Hagerty, Hiebert & Owens, 1989; Larrick, 1987), and (c) the ways literature-based reading instruction has been interpreted by classroom teachers (Hiebert & Colt, 1989; Zarrillo, 1989). Little research, however, is currently available concerning how teachers and classrooms change as instructional practices shift from the use of basal materials to literature for reading instruction. The significance of this question may be illustrated by discussing recent developments in California.

The California Reading Initiative (Honig, 1988) is a state-wide program requiring teachers to use literature for reading instruction. Critics of the Initiative, however, argue that such a change is not as simple as a shift in materials, fearing that, without appropriate training, there is the "risk [of] making the study of literature as dry and meaningless as the basals" (Gardner, 1988, p. 251). Basal reading programs, they argue, have been "mandated for so long that many teachers have lost confidence in themselves as professionals able to help children make choices about what they read and write" (Freeman, 1988, p. 242). Successful implementation hinges on changing the role of the teacher from that of a technician monitoring pupils through commercial reading materials (Borko, Eisenhart, Kello, & Vandett, 1984; Duffy & Roehler, 1982) to becoming an instructional decision maker charged with connecting children with literature in a way that facilitates achievement in reading and supports the development of life-long readers.

Implementation of innovative change in reading instruction, however, is consistently characterized as requiring much time and effort (Hao, 1988; Johnson & Roehler, 1989). Specific time requirements are discussed by Carnine:

> Serious change takes two years to implement and two to four years after that to institutionalize. Rushing the introduction of an innovation is usually counterproductive

> because it can cause problems that remain throughout the entire four to six year process. (Carnine, 1988, p. 86)

Difficulties include teachers, resistant and unwilling to change due to lack of time or interest, who remain unconvinced that the merits of the innovation outweigh the current program (Gaskins, 1988). Clark (1989) adds that, "Adult development is, though we rarely admit it, voluntary. No one can make another professional learn, change, or grow" (p. 26).

If successful implementation of literature-based reading instruction hinges on changing the way teachers make instructional decisions, information concerning how changes occur during implementation and the difficulties teachers experience during implementation could support future staff development efforts during the transition from basal reading instruction to literature-based reading instruction. This study explored (a) changes in classrooms and teachers resulting from increasing the use of literature for reading instruction, and (b) the goals and concerns of teachers during implementation.

METHOD

Setting and Participants

Oakdale Elementary School serves approximately 300 students in kindergarten through sixth grade. It is one of three elementary buildings in a county school district in the Midwest. Interest in using literature for reading instruction has been growing at Oakdale within individual classrooms for the past 5 years. Three years ago, a 5-year plan was developed as part of a building goal to implement literature-based reading instruction in every classroom. Five female teachers at Oakdale volunteered to participate in this study and are identified as Focus Teachers. Their diversity is reflected not only in the grades they teach (grades 1, 3, 5, 6, and Learning Disabilities), but also in their years of teaching experience (3–39 years).

Data Sources and Analysis

Qualitative methodology was used to gather data for this 9-month study through interviews (five per teacher, 30–60 minutes each), observations (six per teacher, 60–90 minutes each), and Forum discussions (10 meetings with various staff members, 90 minutes each). The study was organized into three phases to collect data from a variety of sources during the beginning, middle, and end of the school year (see Table 1). All interviews and Forum discussions were audiotaped, transcribed (approximately 580 pages), and coded using *Ethnograph* (Seidel, Kjolseth, & Seymour, 1988), a computer program with the capability to quickly and efficiently sort and retrieve coded information. Field notes were taken during observations and hand sorted during analysis.

Phase I. Questions during Round #1 interviews focused on ways the teachers had used literature in the past, current goals and concerns, and plans for the approaching school year (see Table 2). The need for a second round of interviews

Table 1

Sequence of Collection Activities

Phase	Techniques	Procedure
Phase I		
August–November	Round #1	
10 weeks	Interviews	AT(5)
	Classroom Observations	FN (5)
	Forum #1—entire staff	AT (1)
	(Topic: Local Literature Conference)	
	Round #2	
	Interviews	AT (5)
	Classroom Observations	FN (5)
	Forums #2 & 3—primary & upper grade	AT (2)
	(Topic: Evaluation Concerns)	
	Focus teachers' trip to Circletown	AT (3)
	Forums #4 & 5—primary & upper grade	AT (2)
	(Topic: Trip to Circletown)	
	Forum #6—Focus Teachers	AT (1)
	(Topic: Discussion with Circletown teacher)	
Phase II		
January–March	Round #3	AT (5)
8 weeks	Interviews	FN (5)
	Classroom Observations	
	Forums #7 & 8—primary & upper grade	AT (2)
	(Topic: State Literature Conference)	
	Round #4	
	Interviews	AT (5)
	Classroom Observations	FN (5)
		AT (1)
Phase III		
April–May	Round #5	
6 weeks	Interviews	AT(5)
	Classroom Observations	FN (5)
	Forum #9—Focus Teachers	AT (1)
	(Topic: Reflections on Changes)	
	Forum #10—all staff	AT (1)
	(Topic: Reflections on Changes)	

Note. AT = audiotaped. FN = field notes. Example: AT (5) = five audiotapes.

arose during triangulation of the first interviews with classroom observations made in September since differences between the ways teachers had discussed literature-based reading instruction during August interviews and implementation early in the year became apparent. Questions during Round #2 interviews focused on the teacher's descriptions of the current components of her reading program and the clarification of discrepancies between Round #1 interviews and current classroom practice. A second set of classroom observations was held following Round #2 interviews.

Table 2

Predetermined Interview Questions

PHASE I

Round #1 Interviews
(August)

1. Tell me about your reading program.
2. How have you used literature in your classroom?
3. What/Who has helped you use literature in the reading program?
4. What difficulties/concerns have you encountered?
5. As you look back over the past 5 years, how has your reading program changed?
6. What was the easiest to change?
7. What was the most difficult to change?
8. What would you most like to change about your current classroom reading program?

Round #2 Interviews
(September)

1. Currently, what are the components of your reading program?
2. How has participation in this study affected the decisions you make about reading instruction?

Additional questions developed for individual teachers based upon the analysis of data collected previously.

PHASE II

Round #3 Interviews
(January)

1. What are the components of your reading program?
2. Discuss the organization of literature-based reading instruction in your classroom.
3. What changes have been made in your reading program since September?
4. What are your goals for change concerning literature-based reading instruction?

Round #4 Interviews
(March)

All questions developed for individual teachers based upon the analysis of data collected previously.

PHASE III
Round #5 Interviews
(April)

1. What is your definition of literature-based reading instruction?
2. Discuss the evaluation issues related to your reading program.
3. What is your position in relation to the building goal of full implementation in 2 years?
4. Discuss the role of choice in terms of both yourself and your students.
5. What are the current components of your reading program?

Additional questions developed for individual teachers based upon analysis of data collected previously.

Four Forum discussions including the Focus Teachers and the rest of the teaching staff were held during Phase I. Teacher educators have recently documented the usefulness of teachers talking with their peers about professional concerns (Clark & Florio-Ruane, 1984; Donmoyer, 1990). Such talk can also be a useful source of data concerning teachers' questions, dilemmas, and evolving understandings about educational issues. The topics for discussion were decided on by the teachers and the researcher based on specific opportunities or emerging concerns. The first Forum, for example, was organized immediately following a literature conference attended by a significant number of Oakdale teachers. In October, separate Forums were scheduled for primary and upper-grade teachers focusing on evaluation concerns. During the third set of Forums, the Focus Teachers presented their observations and responses to a visit to another school, Circletown, where literature-based reading instruction had been used for over 10 years. Although not a part of the original design of the study, the idea of visiting another school emerged from a summer planning session with the researcher and the Focus Teachers. The teachers' conversations were recorded during the 60-minute travel time to and from Circletown, as was the conversation during lunch at a local restaurant. A follow-up Forum led by a teacher from Circletown was scheduled due to questions that arose during the third set of Forum discussions.

Throughout this study, collection and interpretation of data were reciprocally influential as the data analysis affected methodological decisions which, in turn, affected data collection (Wolcott, 1987). The focus of ongoing data analysis during Phase I was to search for patterns of changes and concerns through an intensive review of the audiotapes and triangulation of data sources resulting in the development of preliminary coding categories. Questions for Round #2 interviews also emerged during analysis.

Phase II. Phase II began in mid-January with four-part interviews conducted with each of the Focus Teachers (see Table 2) followed by observations in each classroom. As in Phase I, analysis of data resulted in the development of additional questions that were posed during Round #4 interviews which were also followed by classroom observations. The 3-day national literature conference attended by many of the Oakdale staff was the topic of separate Forum discussions during this phase. Phase II analysis focused on creating an inventory of coding categories, testing the appropriateness of the codes to the data, and developing Phase III interview questions.

Phase III. During Phase III, the final interviews were conducted, each classroom was observed, and two Forum discussions were held focusing on the teachers' perceptions of changes that occurred during the school year. Following withdrawal from the research site, data were analyzed inductively, a process Bogdan and Biklen (1982) compare to constructing a picture which takes shape only after all parts are examined. All data were coded and *Ethnograph* used to document patterns of teacher change and concerns across case studies. The multiple methods of data collection provided opportunities for triangulation among a variety of sources. The credibility of the study was further strengthened through prolonged engagement, persistent observations, peer debriefing, and member checks (Lincoln & Guba, 1985).

RESULTS

Changes in Classrooms and Teachers

Materials. Teachers in this study increased the use of literature in their classrooms by gradually eliminating components of the basal program (see Table 3). Typically, individual stories in basal readers teachers deemed as uninteresting to read were first

Table 3

Pre- and Post-Comparisons of Reading Program Components

TEACHER	A		B		C		D		E	
GRADE	6		5		3		1		LD	
EXPERIENCE	14		39		10		29		5	
PERIOD	SEPT	MAY	SEPT	MAY	SEPT	MAY	SEPT	MAY	SEPT	MAY
MATERIALS										
Basal	partial	none	partial	partial	all	partial	partial	none	partial	few
Stories	none	none	partial	partial	all	none	partial	none	most	none
Workbooks	partial	none	all	all	all	partial	partial	none	most	few
Manual	partial	none	partial	partial	all	partial	partial	partial	most	few
Tests	partial	none	all	all	all	none	partial	none	most	none
Literature	partial	all	partial	partial	none	partial	partial	all	few	all
Teacher choice	all	partial	all	all	all	most	most	partial	all	partial
Student choice	none	partial	none	none	none	few	some	partial	none	partial
ORGANIZATION										
Teacher directed whole class	all	some	most	most	partial	partial	partial	partial	some	some
Teacher directed small group	none	some	some	some	partial	partial	partial	partial	some	some
Student directed whole class	none	partial	none	none	partial	partial	some	some	most	most
Student directed small group	none	partial	none	none	none	none	none	some	none	some
ASSESSMENT										
Formal										
Basal workbooks	partial	none	all	all	all	partial	some	none	most	few
Basal unit tests	partial	none	all	all	all	none	none	none	most	none
Informal										
Running records	none	none	none	none	none	some	some	partial	few	partial
Literature projects	none	partial	none	none	none	some	some	some	none	some
Book logs	none	partial	some	some	none	some	none	some	none	some
Observation	none	some	none	none	none	some	none	some	none	some
Reading conferences	none	some	none	none	none	some	some	partial	none	partial

eliminated. Similarly, workbook pages were skipped that were either uninteresting, repetitive, or confusing. Opportunities for students to select their own reading material increased as teachers' requirements for the students to read specific stories and complete worksheets decreased. End-of-level basal tests continued to be used by the teachers as checks on the progress of their students as readers, but by the end of the year use of basal unit tests was eliminated in four of the classrooms (A, C, D, and E).

At the beginning of this study, the fifth teacher (Teacher B), described the partial elimination of basal materials in her reading program over the previous years also in terms of skipping basal stories to make time to read paperback literature selections. In her classroom, however, use of basal materials remained static throughout the year. During the August interview, she fully described her reading program in terms of exactly which basal materials and novels she would use during the school year. Data collection verified that the components of her reading program did not change during the year and firmly remained as a partial use of both basal components and paperback novels taught largely through whole-class, teacher-directed lessons. Occasional small-group lessons were teacher-directed question and answer sessions on books assigned according to student ability.

Organization. All teachers reported increases in their read-aloud program as they read picture books and chapter books from a variety of genre to their classes at least once each day, as well as increases in amount of time students read silently each day. Reading lessons using literature were organized in ways previously reported (Hiebert & Colt, 1989; Zarrillo, 1989): whole-class lessons planned around a single paperback selected by the teacher; small groups, created by either ability or interest, reading different books; or individual assignments based upon a student-selected text.

By the end of the study, the role of the student in four classrooms shifted in terms of how students spent time when not participating in teacher-directed activities. As workbook assignments diminished, expectations of independent work changed. Seat work assignments changed from filling in workbooks to book-related activities. Students made murals, pictures, and dioramas about books they were reading. Writing activities increased as students wrote alternate endings for books, responses to characters in books, or diaries of historical figures.

Four teachers changed the organizational patterns of their classrooms by the end of the study as they increased the opportunities students had to discuss books and projects related to books in both small and large group settings. The change was most dramatic for Teacher A who shifted from lessons totally directed by the teacher in large-group settings to a mixture of teacher- and student-directed lessons in both large- and small-group settings:

> They [students] are in control of their reading more than I am. More than the teacher. They are taking charge of it instead of the teacher dictating everything. (Teacher A)

No changes were observed in the organization of reading instruction in Teacher B's classroom.

The changes in classroom organizations appeared to be based on a shift in the teachers' definition of their roles. Teacher A, for example, discussed her role at mid-year as shifting from an "imparter" of knowledge to a "facilitator" supporting student knowledge. Similarly, Teacher E described her role as "more to facilitate rather than dictate." As the teachers' roles changed, there was a gradual decrease in teacher-directed whole-class activities and a corresponding increase in student-led sharing and discussion in both large- and whole-group settings.

Assessment. With the exception of Teacher B, teachers in this study decreased the use of basal assessment tools and increased the use of informal measures such as running records, book logs, observation, reading conferences, and literature projects. The teachers felt that the basal assessment tools were not fully capturing the progress their students were making as readers and began to look for ways to measure and record evaluation information. For example, the primary teachers increased use of running records (Clay, 1979) in their classes. Although each of them expressed some difficulty in learning to record students' oral reading behaviors, they also agreed that the process enabled them to learn a great deal about their students:

> When I first started doing running records, I just took them. For a while you just have to take them. Then you say, "OK what am I going to do with this? Little by little, I am catching on to it. Oh, look what this kid is doing. He has done it in the last four running records. We need to work on that." (Teacher E)

Four teachers began using the evaluation of student projects while making grading decisions and also attempted to use individual conferences to obtain evaluation information but experienced difficulty in both organizing and conducting one-to-one meetings. Each teacher attempted to create folders, files, or notebooks about students at some time during the year, yet clearly identified the goal of finding easier ways to observe, record, and use evaluation information. Although each teacher experienced much difficulty as use of informal evaluation measures increased in their rooms, they also became more comfortable justifying decisions about grading through observations of individual students.

Teacher B, however, did not experience either a shift in assessment tools or difficulties which the teachers described as accompanying their changes concerning assessment. Throughout the year, worksheets and unit tests remained the sole basis for determining student's grades:

> First of all, do they understand what they have read? How do you test that? You use your end-of-unit test. They have comprehension activities. Also, I have other dittos that I have made up from other companies on reading comprehension, others on study skills that have tapes with them that we do during the year. I would probably have for a 9-week period probably close to 30 grades. (Teacher B)

Most Frequent Goals and Concerns

Evaluation. The use of worksheets and level tests had simplified evaluation of student progress when teachers were using basal materials. Numerical grades could be easily obtained for both sets of written work and averaged into a grade for the student's report card (see Table 4). As use of worksheets and tests declined, however, teachers' concerns about evaluation increased and were expressed in almost every interview and Forum meeting.

There appeared to be three levels of pressure concerning evaluation for the teachers at Oakdale. The top level of pressure was the teachers' responsibility to the

Table 4

Most Frequent Goals and Concerns During Implementation

- Evaluation
    - Documenting student progress
    - Conducting individual conferences
    - Recording informal assessments
    - Translating formal and informal assessments into grades
    - Using assessment tools to make instructional decisions
- Organization of the reading program
    - Planning daily activities
    - Scheduling individual conferences and small-group work
    - Increasing opportunities for individuals to read silently
    - Supporting low-achieving students
    - Satisfying the course of study
- Materials
    - Selecting appropriate materials
    - Purchasing literature books

district's course of study (COS) and mandated competency testing. Although the reading course of study had recently been revised eliminating many specific pupil performance objectives, upper-grade teachers' increasing integration of literature into other content areas such as social studies and science prompted many discussions of ways to use literature to teach reading within content areas and still satisfy the courses of study which contained very specific goals and objectives. The course of study and competency testing were repeatedly used by Teacher B as sufficient reasons to continue using all of the basal worksheets:

> . . . because we are accountable . . . if a parent complains, I can say, yes, your child got all these skills. They are taught. It [worksheets] is a record of that.

The middle level of pressure concerning evaluation involved grading students' progress as they shifted from numerical grades on worksheets and tests to more informal measures. Teachers in the primary grades felt less pressure concerning grades since they used only three letters: S (satisfactory), N (needs improvement), and U (unsatisfactory) in only three areas: reading, language arts, and mathematics. Upper-grade teachers, however, experienced much difficulty as they were required to assign letter grades in every subject:

> How do I relate the student's progress to a grade card for an A, B, and C and the subcategories to grade their growth in study skills and vocabulary? They don't go with literature-based reading. Without making it glorified basal reading with the vocabulary lists and quizzes, I don't know how to put them together. (Teacher A)

The third level of pressure was the identification of needs and abilities of individual students to inform teachers' decisions about instruction. At this level, what the teacher learned about the student did not have to be translated into a grade, but instead, would affect planning of future reading lessons. Teacher D (Grade 1), for example, found it difficult to formulate a clear picture of her students as readers since she was no longer using worksheets and word lists to define progress:

> I keep thinking that at this time with the basal reading that I knew more of what each child could to than what I do now with some. That is what bothers me. [With the basal] I would have a better handle on them whether they understood what was read or whether they were getting the words. (Teacher D)

Her frustration was compounded by difficulties she experienced taking running records and conducting individual conferences. Similar concerns were raised by the rest of the Focus Teachers, particularly when discussing low-ability students. On one hand, the teachers were enjoying increased opportunities to work with individuals in their classes, but were, at the same time, frustrated that they were unable to fully document their observations and then use these to make instructional decisions.

The teachers' overall struggle with the issue of evaluation was characterized by Teacher A as trying to balance the "monsters" of "accountability" and what she called the "idealistic." On one hand, teachers felt pressure to document student progress with objective measures that could be clearly explained to parents and fairly assign a percentage or letter grade. On the other hand, they were also beginning to see the value of more informal measures of student achievement that were more difficult to document and translate into a number or letter grade and were hesitant to rely on such subjective measures, fearing their opinions were not sufficient grounds for assessing students.

Organization of the reading program. The Focus Teachers found that instructional planning for literature-based reading was quite different from the planning they were accustomed to while using basal reading materials. The first-grade teacher had used the same basal reading plans for many years by writing page numbers in a spiral notebook and simply checking off lessons as they were completed by each ability group. As she began to use literature, however, she realized that lesson planning required much more. Now it was her responsibility to select the sequence of appropriate materials, decide how materials would be used, and define her role and the role of her students. On one hand, she found the process exhilarating as she was able to use much more of her own creativity to plan, but she was also concerned that her plans would provide optimum educational experiences:

> With the basal, I could use the same plans I had before. With the other plans [for literature], they are more lengthy. Planning is hard for me because I know what I want to do during the day, but I am not sure how I should set it up. (Teacher D)

The teachers were consistently concerned about how to use books with students in ways that would foster love of reading but, at the same time, support students' growth as readers. They worried that book discussions would turn into a quiz situation and destroy students' appreciation for the story. The role of book extension projects was similarly questioned. Planning for activities such as dioramas, murals, and other art-related projects was quite different from leading teacher-directed sequential reading lessons and was difficult for some teachers. Book extensions often took significant amounts of time, were completed by students at varying times, and were characterized by more talking among students than seatwork assignments of previous years, which made it difficult for teachers to conduct small-group sessions or individual conferences. Teachers were also concerned that students' time was well-spent while working either independently or in small groups without teacher direction. Teacher B explained that small-group work was not often a part of her classroom organization because students would not be on task unless she was working with them.

Materials. Lack of knowledge about current children's books made choosing materials difficult for some teachers and particularly challenging for Teacher E who was overwhelmed by individual differences in abilities of her learning disabled (LD) students. She was unfamiliar with children's books and consequently had problems finding selections her students could read successfully. As other teachers increased use of themes in their planning, the need for high quality books about specific topics also posed a significant challenge since Oakdale did not have a librarian to assist in organizing book collections, and the district's tight financial situation made it difficult to purchase literature selections.

DISCUSSION

Results of this study illuminate the process of teacher change during implementation of literature-based reading instruction. Although limited to a single staff and focused on 5 teachers within that staff, insights concerning their struggles and successes may prove helpful in assisting other teachers moving toward a literature-based approach to reading instruction. The findings support previous research posing the difficulties of changing teacher beliefs, attitudes, and behaviors (Carnine, 1988; Hao, 1988; Johnson & Roehler, 1989) and should encourage educators to recognize the dual needs of teachers for both support and time. As argued by Clark (1989), however, teacher change is still not guaranteed. Although Teacher B had somewhat reduced use of basal reading materials and substituted paperback novels, she had become quite comfortable with her program and did not change classroom instruction despite the 5-year goal of the building, her participation in this study, or many professional development opportunities.

Difficultues of the Focus Teachers in the areas of materials, program organization, and evaluation identify the need for a specifically designed inservice program. A strong children's literature component is crucial to development of teacher knowledge about children's books and must be coupled with financial support sufficient to purchase literature selections as well as to fund full-time, trained librarians in every building. Inservice sessions concerning classroom organizations would assist teachers in considering alternatives to teacher-directed ability group instruction and to further develop a repertoire of instructional strategies to assist them in planning that reflects their observations of individual needs.

Districts must also support teachers in their efforts to use a variety of assessment tools to fully document progress of students as readers. The resulting tensions, however, felt by these teachers as they attempted to balance informal assessment with demands of accountability in district mandates and grades must also be recognized. Responses to evaluation issues might include a reexamination and revision of the district's course of study and grading policies supporting informal assessment tools, including implementation of portfolios, development of course of study objectives that may be measured by observation and documentation rather than formal testing, and adjustment of grade card formats to include alternatives to letter grades.

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COMPREHENSION INSTRUCTION IN LITERATURE-BASED READING-LANGUAGE ARTS CLASSROOMS

Donna W. Emery
California State University

"Schools don't teach comprehension" Durkin (1981). This comment, made a decade ago, surprised many literacy educators. The statement was based on a study of upper elementary grade classrooms where it was discovered that teachers devoted much of class time to assigning and checking skills pages from the basal reading materials. Further, they spent very little time teaching comprehension, but concentrated on assessing their student's understanding of the text instead. Further research in classrooms substantiated these results (Barr & Sadow, 1989; Neilsen, Rennie, & Connell, 1982).

For many years, basal reading programs have been used in well over 90% of elementary reading classrooms in the United States (Anderson, Hiebert, Scott, & Wilkinson, 1985). The knowledge that teachers used these programs mostly as sources of assignment sheets and a ready supply of questions has produced alarm. Further, research indicates that children of the lowest ability spent more time on skills and less time reading silently and being meaningfully involved in extended text than good readers (Allington, 1983).

In reaction to such findings and with concern for lack of growth in reading comprehension, especially for students of diverse ethnic and language backgrounds (Mullis & Jenkins, 1990), alternative reading programs have been developed. The *English-Language Arts Framework for California Public Schools* (California State Department of Education, 1987) is one such alternative. The framework focuses on literature as the basis for instruction for all students.

The authors of the California Framework recommend "instruction that makes explicit the strategies being used to promote comprehension in reading . . ." (p. 16). Thus, we would hope to find comprehension instruction in literature-based classrooms. However, Pearson (cited in O'Neal, 1990) voiced concern over whether the emphasis in literature-based reading programs is more on the material read (literature), rather than on instruction. It is possible that Durkin's findings (1978–1979) will hold true for these classrooms as well. This study investigates whether fourth- through sixth-grade classrooms, identified as following the California language arts framework, can be described as spending a significant amount of class time on comprehension instruction, while decreasing the amount of time spent on isolated skills and assessment.

METHOD

School principals and language arts coordinators from three school districts in the greater Los Angeles area were asked to identify fourth- through sixth-grade teachers whose classrooms they considered to be strong examples of the literature-based language arts program described in the California framework. Fourteen of these teachers described themselves as using the guidelines of the framework and agreed to allow a research assistant and myself to videotape their classrooms during the reading-language arts period. The students in these classrooms were from diverse ethnic and language backgrounds with approximately 20% White, 60% Hispanic, 8% Black, 8% Oriental, and 4% other. The 14 teachers were observed once each for an average of 70 minutes (986 minutes total) during October and November of 1990.

Data were recorded using the same format as the Durkin (1978–1979) study. Two raters, observing either the actual classroom or the videotape, recorded each change in teacher-instigated activity that endured for at least 30 seconds. When an activity involved comprehension, detailed records were kept, including verbatim transcripts of the interactions. In the few instances when groups of children were working under the direction of an aide or on their own, field notes were taken of their activities. However, the data collected for the study were the amounts of time spent on various activities under the supervision of the teacher. The time, category of activity, audience, and material being used in the activity were entered into a grid.

The Category section was completed later. Two separate category systems were used, resulting in two separate analyses. The purpose of the first analysis was to find out how much of the total class time was devoted to what Mason (1983) has called text-reading sequences. Text-reading sequences consist of Introduction, Reading, and Discussion. The Introduction includes meaning vocabulary, background information for the passage, motivation, or purpose-setting before reading the selection. Reading includes the time when students read orally or silently under the teacher's guidance. Discussion is any teacher-student interaction about the text following or during the reading. All other Literacy-Related Tasks are lumped into the Other Literacy Tasks category. Nonliteracy Tasks include activities not related to the language arts, such as time spent explaining the directions for an assignment or passing out materials and transition periods.

The purpose of the second analysis was to specify the *types* of literacy tasks that occurred during any of these text-reading sequences, as well as during the Other Literacy Tasks time. The categories for the second analysis were adapted from Durkin. The literacy tasks include Writing, Meaning Vocabulary, Word and Language Skills, and Comprehension tasks. Writing is defined as involvement in an original composition of at least one sentence. Meaning Vocabulary includes all times when attention is given to the meaning of a word. Word and Language Skills include word analysis tasks (phonics or structural analysis) or language arts skills (parts of speech, conventions of writing, or spelling).

Comprehension is defined as attention to the meaning of units larger than a word. Comprehension tasks are divided into categories described by Durkin (1978–1979): (a) Comprehension Preparation is anything the teacher does to prepare for reading before it begins, such as attempts to motivate, provide children with background or to get children to predict; (b) Comprehension Instruction happens when the teacher does or says something to help one or more children understand or work out the meaning of more than a single word; (c) Comprehension Application is said to occur if the teacher does or says something in order to learn whether comprehension instruction enables children to understand connected text; (d) Comprehension Assessment includes questioning children about something they have read; and (e) Comprehension Assignment includes an assignment that takes place after reading that requires the comprehension of connected text. Both analyses were done by two raters and interrater agreement was high (92%). Differences were discussed and resolved.

RESULTS OF THE FIRST ANALYSIS

Material and Audience

All of these classrooms read literature selections that were "on grade level" or above in terms of readability for the grade placement of the children. In each case, the entire class engaged in the same activities, whether they were working as a whole, in small groups, or individually. In all but two classrooms children worked in cooperative learning groups for a portion of the lesson. Cooperative learning groups are defined here as heterogeneous groups of two to eight children who have been given the goal of cooperating towards a common objective. Of the 986 minutes observed, whole-class instruction occurred 62% of the time, children worked independently or in individual consultation with the teacher 10% of the time, cooperative learning groups occurred 22% of the time, and a small group worked with the teacher 6% of the time. During the time that the teacher worked with small groups, the rest of the class worked independently or under the direction of an aide.

Text-Reading Sequences

Table 1 indicates the number of minutes spent in text-reading sequences in relation to other tasks. Of the total 986 minutes of reading-language arts instruction, the text-reading sequences of Introduction (15%), Reading (26%), and Discussion (14%) constituted 55% of the time. Other activities included Other Literacy Tasks (32%), and Nonliteracy Tasks (13%). Six of these teachers (43%) led their class in a complete text-reading sequence, including Introduction, Reading and Discussion, as opposed to only 8% of the classrooms observed by Mason (1983). Partial text-reading sequences occurred in 29% of the classes, 14% did only some Reading, and 14% were not involved in text-reading sequences at all. Mason (1983) found whole or partial text-reading sequences in fewer than half of the reading group lessons that she observed, whereas 72% (10 out of 14 classes) of these classes were involved in at least partial text reading sequences.

RESULTS OF THE SECOND ANALYSIS

As indicated above, the data were analyzed again to determine the amount of time spent on specific literacy tasks within any of the above time periods. The literacy

Table 1

Number of Minutes Devoted to Text-Reading Sequences

		Text-Reading Sequences			Other	
Class	Total	Introduction-Reading-Discussion			Other Literacy Tasks	Non-Literacy Tasks
1	51	12.5	18	13	0	7.5
2	85	31	31.5	17.5	5	0
3	81	1.5	20.5	39	20	0
4	64	9	21.5	13.5	13	7
5	89	30	24	3	14	18
6	95	0	45	0	40	10
7	50	38	4	0	0	8
8	70	0	0	0	65	5
9	90	0	2	0	66	22
10	60	9	47	0	0	4
11	53	0	28.5	22.5	0	2
12	83	0	0	0	80	3
13	55	12	7	6	15	15
14	60	10	13	30	0	7
Sum	986	153	262	144.5	318	108.5
Mean	70	11	19	10	22	9
%	100%	15%	26%	14%	32%	13%

tasks included Writing, Meaning Vocabulary, Skills, and Comprehension activities. Comprehension activities were categorized as Comprehension Preparation, Comprehension Instruction, Comprehension Application, Comprehension Assessment and Comprehension Assignment (Durkin, 1978–1979).

Writing

Twelve of the 14 classes were engaged in writing. Most of the writing activities were categorized as something else since children were writing as part of a comprehension assignment or part of independent reading time. Almost all of the writing was related in some way to the literature the children were reading. Of the two classes where writing was not observed, the teacher used literature as a model for future writing. (See Table 2 for the nature of the writing activities observed.) Children were asked to give written answers to comprehension assignments, such as: finding facts, identifying main ideas, providing answers to questions. Most children had their own reading journals in which they wrote free responses to the literature or they responded to a prompt provided by the teacher.

Meaning Vocabulary

A total of 16% of the 986 minutes observed was spent on word meanings. Of the time spent on Meaning Vocabulary, 56% occurred before reading the selection, 17%

Table 2

Examples of the Nature of the Writing Activities Observed

Teacher	Nature of the Writing Activity
1	No time was spent writing, but homework was assigned (writing a story based on a story structure outline).
2	Cooperative groups wrote answers to questions.
3	No actual writing but literature was used as a model for future writing.
4	Cooperative groups read and wrote three facts.
5	Individuals wrote answers to questions.
6	Some students wrote during individualized reading time as a way of responding to a book.
8	One of five groups wrote about African animals.
9	Revision of yesterday's draft in Reading Journal and about 6 minutes of pre-writing.
10	During reading time, pairs read and wrote the main idea.
11	One of the groups not meeting with the teacher wrote in journals.
12	Writing was the principal activity involving pre-writing with poetry, clustering, and writing various kinds of paragraphs in groups.
13	No actual writing, but literature was used as a model for future writing.

occurred during the reading and discussion of the selection, and 27% occurred during the follow-up time. About 90% of the time that word meanings were discussed, the teacher asked for or gave a definition of the word. The rest of the time, the teacher asked for or gave a sentence containing the word (5%), or led the class in analyzing the word in terms of word structure (5%). Only one teacher had the students read the sentences in the text in which the word was mentioned before asking for a definition. All vocabulary words were taken from the literature selection.

Word and Language Skills

Only 5% of the 986 minutes of observed time was spent on Word or Language Skills. Three teachers taught either structural analysis, parts of speech, or types of paragraphs. No phonics instruction was observed. All of the teachers used the literature as a source for skill instruction.

Comprehension

Table 3 presents the percent of total observed time spent on the various comprehension categories. Comprehension Preparation occurred 7% of the time and consisted of discussing the setting, relating student's experiences to the text, reviewing previous sections of the story, or making predictions. Comprehension Instruction was observed less than 3% of the time and included situations where the teacher discussed text features, such as the elements of a myth or personification. Only one teacher provided any guidance as to how to work out the meaning of connected text. During the discussion period several teachers attempted to lead the children to more refined answers to comprehension questions by asking them to give their evidence or to look for the part of the text that might support their answers. However, these few incidents

Table 3

Percent of Total Time Spent on Comprehension Tasks and Types of Activities

Comprehension Category	Percent	Types of Activities
Comprehension Preparation*	7%	Discussion of experiences similar to those to be encountered in the text Predictions as to plot or setting Review of previously read parts Discussion of setting information
Comprehension Instruction	3%	Elements of a myth Personification Criteria for identifying fact or opinion
Comprehension Application	0%	
Comprehension Assessment**	15%	Question/Answer Sequences about the information or concepts in the text
Comprehension Assignment	10%	Interpret a descriptive text Find examples of facts Identify the main ideas Compare and contrast two versions of a myth

*9% of total observed time was also spent discussing word meanings before reading the selection. **5% of the total observed time was spent discussing word meanings during the reading discussion and follow-up periods.

were too brief (10 to 15 seconds each) to be counted as Comprehension Instruction. Comprehension Application was not observed at all.

Comprehension Assessment occurred 15% of the time. The teachers asked questions about the information in the text (What was Jimmy's destination?) or about concepts involved in the text (How far is 65 miles?). Questions were followed by one or more student answers, followed by an evaluation by the teacher (e.g., "very good"), or by an elaboration of the answer by the teacher. Little assistance was given in figuring out answers to these questions. If an answer was considered inadequate or incomplete, the teacher asked another child or gave a more complete answer herself.

Students were involved in completing Comprehension Assignments 10% of the total time. Children were asked to interpret a descriptive passage by drawing a picture, to find examples of facts, to identify the main ideas, and to compare and contrast two versions of a myth. However, there was no evidence that children had been taught HOW to do these comprehension tasks. They were simply given the assignment to complete. Time was also allowed for sharing answers, but there was no discussion of how the answers came about.

Teachers in Durkin's study (1978–1979), over a decade ago, using basal texts, spent similar proportions of class time on various comprehension activities as did these literature-based classroom teachers. These include: Comprehension Preparation (6% then, 7% now), Comprehension Assessment (18% then, 15% now), Comprehension Assignment (8% then, 10% now), Comprehension Instruction (1% then, 3%

now). No Comprehension Application (of Instruction) was observed then or now. Teachers in literature-based classrooms spent 16% of their time on Meaning Vocabulary, while teachers in Durkin's study only spent about 3% of class time in this way.

DISCUSSION

It was apparent that the teachers in this study were emphasizing meaningful reading. In a majority of the classrooms children and teachers were involved in text-reading sequences. Further, meaning-related activities accounted for 77% of class time if one counts all comprehension (35%), word meaning (16%), and reading (26%) activities (see Hodges, 1980, for a similar reanalysis of Durkin's data).

However, the questions are: Are teachers in literature-based classrooms spending less time on isolated skills, less time on assigning comprehension tasks and assessing comprehension, and more time on teaching children how to comprehend? The answers appears to be both positive and negative. On the positive side, teachers in these classrooms devoted less time to skills, and when skills were taught they were not taught in an isolated fashion, but were derived from the literature the children were reading and discussing.

On the negative side, teachers were still devoting much of their time to assigning comprehension tasks and assessing comprehension instead of providing instruction that would assist children in deriving meaning from texts. Instruction in strategies that would show children how to work out the meaning of texts was almost completely lacking. Children were assigned comprehension tasks, but were not told how to do these tasks. They were questioned about the texts they had read, but were not instructed as to how to go about answering if they did not already know the answer. Teachers gave answers, but did not model how they came to these understandings, what strategies they used, or how the passage provided clues for them.

The role that the teacher played in most of these classrooms was that of "comprehension repairman." They asked questions over the passage, often continuing to ask the same question, searching for "comprehension in need of repair." Then, when they located deficits in a student's understanding, they would try to "fix" it by supplying background knowledge, the meaning of a word, or a more refined version of the answer to their question. Similar interaction patterns were found by Weber and Shake (1988) and Duffy and McIntyre (1982).

Why are teachers, more than a decade later, and using literature instead of basal reading texts, still devoting so much time to question-asking and assignment-giving, rather than comprehension instruction? Perhaps they are not given enough guidance in conducting comprehension instruction. Weisendanger (1985–1986) studied teachers who had been specifically taught how to provide comprehension instruction for children. She found that these teachers spent 14.8% of class time on comprehension instruction, in contrast to the less than 1% found by Durkin and by Neilsen, Rennie, and Connell (1982), and the 3% found for comprehension instruction in the current study. Weisendanger's results may provide a hopeful direction for leaders in the literature-based movement. It is unlikely that the California "experiment" (Cunningham, 1989) will fail due to poor literary choices. However, unless teachers are given help in providing comprehension instruction as well, literature-based programs may fall short of our expectations.

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110.5 **Information-processing, notetaking and achievement: Connections for the undergraduate student.** Susan R. McIntyre, Indiana University

110.6 **The effect of phonemic awareness ability and reading instructional approach on first-grade children's acquisition of spelling and decoding skills.** Priscilla L. Griffith and Janell Klesius, University of South Florida

111.1 **Home literacy environment and experiences: A description of Asian-American homes and recommended intervention.** Junko Yokota Lewis, University of Iowa

111.2 **Inner speech—The reading/writing connection?** Dawn Latta and David B. Yaden, Jr., University of Houston

111.3 **A descriptive study of reading comprehension instruction in literature-based classrooms.** Donna W. Emery, California State University at Northridge

111.4 **Exploring relations between strategic reading comprehension and performance in a specific domain: The case of law.** Dorothy H. Deegan, New York University

111.5 **Learning to read in third and fourth grade.** Linda Anne Meyer, James L. Wardrop, C. Nicholas Hastings, and Gerald K. Arnold, University of Illinois at Urbana-Champaign

112.0 **Comprehension instruction: Concepts and strategies**

112.1 **Effects of reading ability, prior knowledge, topic interest, and locus of control on at-risk college students' use of graphic organizers and summarizing.** Ernest Balajthy, SUNY at Geneseo, and Renee K. Weisberg, Beaver College

112.2 **The elusive nature of main ideas: Reading in and out of one's discipline when given different versions of a main idea task.** Diane L. Schallert, Debra K. Meyer, and Pichun Wu, University of Texas at Austin

112.3 **Bridging across instances of a concept in science instruction.** David A. Hayes, P. Elizabeth Pate, and C. Stephen White, University of Georgia

113.0 **Research on general education teachers' planning and adaptation for mainstreamed students**

113.1 **Research on general education teachers' planning and adaptation for mainstreamed students: An overview.** Sharon Vaughn, University of Miami, and Twila Grandchamp, Dade County Public Schools

113.2 **Survey of general education teachers' planning and adaptation for mainstreamed students.** Jeanne Shay Schumm and Diane Haager, University of Miami

113.3 **An investigation of general education teachers' knowledge of and attitudes toward adaptations for mainstreamed students.** Sharon Vaughn, Billie Birni, and Jane Gordon, University of Miami

114.0 **Literacy and the learning disabled**

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114.2 **Developing independent active reading behaviors with disabled adolescent learners.** Valerie Anderson, Ontario Institute for Studies in Education, and Marsha L. Roit, Open Court Publishing Company

114.3 **The production of literary themes by learning-disabled and non-disabled students.** Mona Moss and Joanna P. Williams, Teachers College Columbia University

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115.3 **Alternative assessments of literacy: Teachers' actions and parents' reactions.** Terry A. Hutchinson, Peggy A. Raines, and Elfrieda Hiebert, University of Colorado at Boulder

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118.3 **Examining preschoolers' oral and written monologue attempts for evidence of developing metacognition.** Carolyn Gray and Beverly E. Cox, Purdue University

119.1 **Responding to professional literature: Computer mediated conversation.** Jamie Myers and Terence Ahern, Pennsylvania State University

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119.3 **The role of phonological processing and cognitive factors in preschool children—In predicting first and second language word identification skills: A report of phase one.** Esther Geva, Ontario Institute for studies in Education

119.4 **Journals to cognitive change: Reflections in private mirrors.** Thomas A. Caron, SUNY

119.5 **A multifaceted investigation of the validity of the reading portion of the Illinois goal assessment program.** Eunice A. Greer, P. David Pearson, and Linda Anne Meyer, University of Illinois at Urbana-Champaign

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120.1 **The impact of achievement goal orientation on affect, cognition, and behavior and learning performance: A link between attributional and reading research.** Jeannie L. Steele, University of Northern Iowa, and Kurt S. Meredith, University of Iowa

120.2 **A case study of a teacher's cognitive movement toward developing and implementing an innovative reading program.** Betty Pritchard and Beth Ann Herrmann, University of South Carolina

120.3 **Computer assisted reading instruction in foreign and second language: A guide for the innocents.** Cira Torruella, Indiana University

120.4 **Academic tasks in secondary level instruction: A view of the classroom as text.** Ann Batchelder, University of Arizona

120.5 **Assessing a model of reading through state assessment.** Lauren Leslie, Marquette University, and Jacque Karbon, Wisconsin Dept. of Public Instruction

120.6 **Task dimensions and effects of a multiple-exposure/multiple-context strategy for non-readers.** Sandra McCormick, Ohio State University

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122.0 **Statistics and reading research**

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123.3 **Information processing differences between good and poor and fast and slow college-age readers.** Joan L. Rankin, University of Nebraska at Lincoln

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126.1 **Teaching the bears to dance: A theoretical framework.** Sherry Vaughan, Washington State University

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127.3 **Effects of story reading on literary language acquisition in a diglossic situation.** Dina Feitelson and Zahava A. Goldstein, University of Haifa, and Jihad Iraqi, Haifa District Public Schools

128.0 **Texts features and learning**

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129.3 **The comprehension of narrative and expository texts: Comparing good and poor eighth-grade readers.** Arlene Adams, University of Wisconsin at Parkside

129.4 **A study of dialogical teaching with seven "learning disabled" fifth graders.** Michelle Commeyras and P. David Pearson, University of Illinois at Urbana-Champaign

129.5 **An assessment of the effects of annotation training.** Susan L. Strode, University of Missouri at Kansas City

129.6 **Effects of teacher accountability on instructional practices and student learning and motivation.** Samuel D. Miller, Treana Adkins, and Mary L. Hooper, University of North Carolina at Greensboro

130.1 **The metacognitive reading strategies of expert bilingual readers.** Robert T. Jimenez, University of Illinois at Urbana-Champaign

130.2 **Effects of semantic mapping and explicit instruction on text organization of sixth-grade expository and narrative compositions.** Frances T. LaCognata, Governors State University

130.3 **The effect of reading ability of eighth graders (good vs. poor) and way of presentation (reading vs. listening) on students' comprehension.** Mohammad Migdadi, Yarmouk University

130.4 **Using text structure to compose meaning.** Geraldine E. Castleton, Queensland University of Technology

130.5 **A social constructivist view of discourse processes in cognitive strategy instruction in literacy and the internalization of dialogue from social interactions during writing.** Troy V. Mariage, Michigan State University, and Sarah J. McCarthy, University of Michigan

130.6 **Story knowledge in the telling: What readers reveal.** Gary N. Osako and Andrea Celine Sledge, Lehman College–CUNY

131.1 **State-by-state assessment of reading.** John Guthrie and Peter Afflerbach, University of Maryland, Ina Mullis, Educational Testing Service, and Dorothy Strickland, Rutgers University

131.2 **Beginning to read: The debate continues.** Marilyn Adams, Bolt, Beranek and Newman, Isabel Beck, University of Pittsburgh, Brian Cambourne, University of Wollongong, and Christine Pappas, University of Illinois at Chicago

131.3 **At risk: A world view of problems and solutions.** Trika Smith-Burke, New York University, Dina Feitelson, University of Haifa, Peter Winograd, University of Kentucky, Violet Harris, University of Illinois at Urbana-Champaign

131.4 **Teacher education in literacy: Changing paradigms.** Robert Donmoyer, Ohio State University, Jan Turbill, University of Wollongong, Jerome A. Niles, Virginia Polytechnical Institute and State University, and Virginia Richardson, University of Arizona

132.0 **Writing and publishing**

132.1 **Writing for juried journals.** William H. Teale, University of Texas at San Antonio

132.2 **Writing for juried journals.** Deborah R. Dillon, Purdue University

132.3 **Writing conference proposals.** James V. Hoffman and Diane Schallert, University of Texas at Austin

132.4 **Writing for the NRC and other yearbooks.** Sandra McCormick and Jerry Zutell, Ohio State University

132.5 **Writing textbooks and other professional books.** P. David Pearson, University of Illinois at Urbana-Champaign

132.6 **Writing textbooks and other professional books.** Michael Sampson, East Texas State University

132.7 **Collaborating with teachers.** Judith M. Newman, Mount Saint Vincent University

132.8 **Writing for the novice: The first article.** Sherry C. Vaughan, Washington State University

132.9 **Writing for the novice: The first article.** Karen Feathers, East Texas State University

133.0 **Exploring literacy issues: Three student literacy corps projects**

133.1 **An adult literacy volunteer program: Its effects on the tutor.** Timothy Shanahan, University of Illinois at Chicago

133.2 **Vital elementary/secondary/university partnership: Impact on school and teacher education programs.** Judy Nichols Mitchell, Rena Leith, Eileen Obler, and Gloria Pleasant-Richman, University of Arizona

133.3 **Teacher-researcher teams: Volunteers exploring literacy and teacher/school change issues.** Beth Ann Herrmann, University of South Carolina

134.0 **Outgrowing ourselves: Reflections and extensions.** Open forum for all conference attendees